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Special Libraries, December 1951

Special Libraries Association

Special Libraries

The Library of
The American Swedish Institute

Preservation of *Original Documents* vs. Preservation by *Microfilm*

The Technical Library at
S. C. Johnson & Son, Inc.

and

Report of the Nominating Committee
1951-1952

Vol. 42, No. 10, December, 1951
Special Libraries Association

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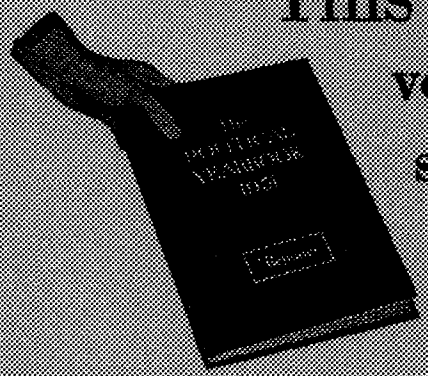

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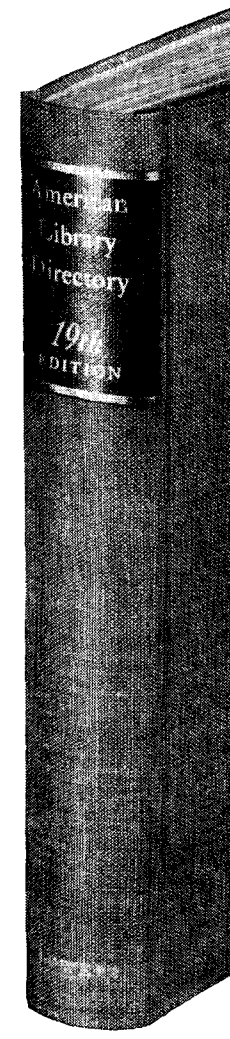

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Public, college and university, governmental, medical, institutional, law, business, industrial, research and other special libraries in the USA and Canada. (School libraries will be covered in a separate volume to be issued in the Spring of 1952). Includes the names of key personnel, special collections, special departments, volumes, income, salaries, book budgets, etc. There is an index to memorial library names.

In This Issue...

We take pleasure in presenting as fine a series of articles as SPECIAL LIBRARIES has ever assembled in a single number.

Those fortunate enough to attend the convention last June and to visit the library of the Swedish American Institute will probably turn immediately to Nils Sahlin's enjoyable piece. Mr. Sahlins' ready wit and humor make his article a must on your reading list.

On the working side of the table there is a wealth of factual information in Sol Steinberg's "Preservation of Original Documents" and William Offenhauser's "Preservation by Microfilm." While not librarians, these men are actively engaged in preservation work and able to present the technical aspects involved in questioning the relative merits of primary versus secondary preservation of material.

Similarly, "Is Binding the Answer?" by Robert Sale, poses a question many of you have probably been asking yourselves. In his discussion of the situation as it exists at United Aircraft, Mr. Sale touches upon many of the general considerations one must bear in mind before deciding whether to keep an original document or to dispose of it in favor of a micro-reproduction. Preservation problems being always uppermost in the minds of librarians, these articles are worthy of careful reading and studied consideration.

Victims of cramped quarters and poorly designed libraries may well find hope in Ina Kuzel's account of the library at S. C. Johnson & Son, Inc. Here is one more instance of the progress that can be made as a library proves its continued value to an organization.

Professional training is the basis of an article by John Emmett Burke. Mr. Burke covers both background and schooling in preparation for a career as a special librarian. Among his conclusions is one statement worthy of constant repetition: "Special libraries must justify their existence by good service."

With this thought in mind we say, in the words of that jovial fellow who is the the symbol of the season: "A merry Christmas to all and to all a good night."

Special Libraries

OFFICIAL JOURNAL OF THE SPECIAL LIBRARIES ASSOCIATION

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VOLUME 42 DECEMBER 1951 NUMBER 10

ARTICLES

SPECIAL LIBRARIES ASSOCIATION

FEATURES

Indexed in Industrial Arts, Public Affairs Information Service, and Library Literature

SPECIAL LIBRARIES published monthly September to April, with bi-monthly issues May to August, by The Special Libraries Association. Publication Office, Rea Building, 704 Second Ave., Pittsburgh 19, Pa. Address all communications for publication to editorial offices at 31 East Tenth Street, New York 3, N. Y. Subscription price: $7.00 a year; foreign $7.50; single copies, 75 cents. *Entered as second-class matter February 5, 1947, at the Post Office at Pittsburgh, Pennsylvania, under the Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in the Act of February 28, 1925, authorized February 5, 1947*

By virtue of its being a model of what a special collection should not be, there is a weird fascination for booklovers in

the Library of

The American Swedish Institute[1]

by

NILS G. SAHLIN, *Acting (like) Librarian*

DIPLOMATIC MEMBERS of the Special Libraries Association would probably refer to the library of the American Swedish Institute as a "challenging problem." To me it is a headache, migraine type, that is periodical and usually confined to one side of the head. Your friendly advice or expression of sympathy should be accompanied by an aspirin donation.

We have never had a librarian. Our books are not cataloged. There is no budget for accession, binding or any other library activity. Furthermore, library-wise I am an ignoramus and a layman. From here you may read on with suitable shudders in appropriate places.

The major portion of our library came from three private and extremely heterogeneous collections. One belonged to Swan J. Turnblad (1860-1933), the original owner of the palatial mansion in which the institute is housed. A newspaper owner and editor, he had a variety of interests, but apparently no field of major concern or concentration. Hence he left, for me to worry about, a scattered sampling of Swedish literature, books relating to Swedish history, geography, biography and miscellaneous subjects. They total about three thousand volumes and are mostly in Swedish. The collection also includes quite a few yards of bound journals. Although all of the runs stop circa 1929, the year Turnblad founded the institute, and many much earlier, we have here some excellent records (some of them pictorial) of Swedish current events as well as of the progress in belles lettres and science from approximately 1880. In these journals we find, inter alia, the first printings of innumerable stories and articles by many who later became prominent figures in Swedish literature and other fields.

A second collection was donated by the late C. J. Johnson, by profession a lumber manufacturer in Minnesota, by avocation an omnivorous collector and reader. Most of his three thousand books are in English. They range all the way from travel and biography to psychology and religion. The question might well be asked — and frequently is — what these books are doing in the institute. As heir to many doubtful blessings I often wonder.

Our third collection was the center around which the life of the Reverend Axel Lundeberg revolved. With his long beard and many (shall we say) unusual ideas, he must have been quite a character, even to the Swedes. A prolific writer and able preacher with all-inclusive interests, he could justifiably lay claim to being a true intellectual. *Humani nihil alienum* may well have been his motto. His books run the gamut

[1] This article is the outgrowth of a talk given by Mr. Sahlin when members of the Museum Division visited the American Swedish Institute during SLA's 42nd annual convention.

from *Al Capone* and *The Strange Death of President Harding* through Greek and Hebrew dictionaries to *The Ante-Nicene Fathers* in ten volumes. Lundeberg passed through several religious denominations and philosophies of life. Owing to the fact that he ended up as a Swedenborgian, the institute now possesses a rather impressive collection of books by and relating to the great Swedish scientist and mystic, probably the largest in this country next to that of the Swedenborg Foundation in New York.

Sources and Fates of Acquisitions

Practically every week someone donates books to the institute. It may be one or two, or a hundred or more. We accept them all on the express condition that we can do anything we please with them, even make tossed salad from the leaves. Any good librarian recognizes the feeling of satisfaction derived from searching through a lot of old books. It is, of course, the very human "treasure hunt" urge. You dig until you are dirty to the armpits, only to find the smallest nugget, if any, and still you crow to yourself. Most of our countrymen seem to labor under the impression that if the institute needs anything it is a Swedish Bible. Some day I shall set up a special display called "The Swedish Bible through the Ages." Many of the books donated to us are later called for by the Salvation Army, some are added to the library, others sold as duplicates or "surplus" for a dime or two, and a few are laid aside for later consideration. Incidentally, it is amazing how often such random book donations fill gaps or furnish a desired item.

At the outset I stated that we have no budget for the library, but in a reckless moment a year ago I bought a collection of 300 Swedish books for $25. About a third of these were added to our library, filling some deficiencies and furnishing some interesting additions. Some 150 volumes have been sold for circa $50; another half hundred are still waiting for bibliophile adoption. As far as I know there have been no horsemongers in my family.

This business of sorting our haphazard acquisitions leads to a few words on my pile theory.

Brazenly we claim that the institute possesses about fifteen thousand volumes. Actually, no one knows, least of all I. It is my innocent belief that our first project should be to sort our books into three piles:

Pile One. Books that obviously fall within the province of the institute's activities, or might conceivably be of interest or use to the staff, to institute members or to visiting scholars.

Pile Two. Books that might be useful to other institutions, such as a theological seminary, special libraries elsewhere or to a private collector. (Three years ago we presented part of Mr. Turnblad's loan library—about two thousand volumes in French and German—to a nearby university. The respective officials seemed not even tepid in their appreciation, despite the fact that the numerous volumes by fifth and sixth rate authors will furnish Ph.D. candidates with dissertation material for decennia.)

Pile Three (my favorite pile). Books which by no stretch of the imagination would be of any use to us, to other institutions or to anybody else. This pile would undoubtedly be gratifyingly large. Aside from the possibility of selling a few volumes the disposal is obvious.

There might of course be still a fourth, the *Beset-by-Doubts Pile.* Each book in this would have to await Superior Judgment as to value. We might have to call in help from Washington, whence cometh aid to all citizens in distress, presumably including harassed librarians.

Lest you gather the impression that we are completely helpless with our books, I might add that they have been subjected to rough classification. This includes alphabetization by author, where that is practical, as in literature and biography, or by region in some groups, by chronology in others. In effect the books are cataloged in my head.

This appears to be the only record in concrete since the time of the cuneiform or *Keilschrift*. Mirabile dictu, I can usually find a book when asked for it, or tell with fair certainty that we do not have it.

Rare and Curious Items

Among the books which have landed at the institute in one way or another are a number of interesting items and some real treasures. We have, for example, a fine copy of the first Swedish Bible, the famous Gustavus Vasa Bible, printed in 1541. As far as I know, there are only two copies in the United States, the other one reposing at the American Swedish Historical Museum in Philadelphia.

We have books with seventeenth and eighteenth century imprints by the score. A curious and intriguing item among them is a little twenty-four page pamphlet which I found in a collection of sermons. (I always leaf through a volume, looking for "inserts.") Printed in Abo (Turku), Finland, in 1781, it starts, when you get past the Swedish title page, with a poem in French; then we have a dedication in German. The text is in Swedish, but interspersed with copious references and quotes from French, German and Latin works. In translation the title is: *Attempt at a Systematic Classification of Women's Weaknesses* (Försök/til/en systematisk indelning,/pa/Fruntimmers/Svagheter).

Rather touching are the little hymnbooks from around 1850. These are bound usually in vellum and adorned with all kinds of symbols and mottoes concerned with love and faith. You see, these were traditional engagement presents and, as such, very precious. Women being what they are, the girls were not rash enough to take these to church every Sunday. Instead, the books were usually wrapped with care in a piece of cloth and laid away in a drawer. Having been used only on very festive occasions they are still in excellent condition — sweet reminders of an era with greater faith and a simpler, but more genuine life, than we can boast in our day and age.

The bibliophile's heart would also be gladdened by another item, a copy of Luther's *Little Catechism*, printed in Stockholm in 1793. When this little book was 66 years old, in 1859, someone still thought enough of this unassuming volume to make a case for it from two pieces of wood. The case is painted, nicely decorated, and adorned with the owner's initials and the date mentioned. Perhaps a wise father made it for his son, to whom he also passed on the love for books that demands their preservation and care.

Services

All our books, except those classified as rare, may be borrowed free of charge by our members. Actually we draw no lines, for we fervently believe that books are printed to be used and read. Anyone who wishes to borrow a book from the institute may do so. Occasionally we even have the pleasure of mailing books as loans to other parts of the country, usually to people or groups, such as school classes, who make a request to our information service.

Part of that information service, and distantly related to the library, is our collection of films. At present we have about fifteen, all 16 mm. sound, on Swedish or Scandinavian subjects. They are much used locally, but also sent by mail to various parts of the country on request. Some are free, others carry a small handling or rental charge.

Another service that intrigued our visitors from the Special Libraries Association last spring is our department of translations. This activity has not been much publicized and consequently is not requested very frequently. We are, however, called upon from time to time to make certified translations to or from the Scandinavian and other languages, especially of legal documents in inheritance cases. We make every effort to secure staff members qualified linguistically. Even our building custodian

(*Continued on page* 404)

SOL STEINBERG

Preservation of ORIGINAL DOCUMENTS[1]

THE NEWS SERVICES and many technical and trade journals recently carried a story of the permanent preservation of the Declaration of Independence and the Constitution. Each document rests on a special, pure cellulose backing paper in an inert helium atmosphere at a controlled relative humidity — all in a sealed glass envelope which filters out destructive light rays.

This should be an effective procedure, if costly and bulky, and sums up the precautions necessary to give permanence:

1. Inert atmosphere } will keep the rate of deterio-
2. No harmful light } ration very low.
3. Controlled humidity — avoids dimensional changes with their attendant stresses and strains in the paper.
4. Sealed against foreign materials.
5. Handling is kept to a minimum.

Paper Manufacture

Many samples of paper and printing are available that date back hundreds of years. Ts'ai Lun is credited with the actual invention of paper for brush writing at about 100 A.D. in China. Before that, strips of bamboo, papyrus, wood, etc. were used for writing. The year 770 saw in Japan the first use of paper for printing from wood blocks. It would appear that movable metal type was in use in Korea long before 1436 when Gutenberg first used it in Germany. In Europe, this resulted in an ever increasing need and demand for paper, hence, for papermaking "furnish" or rags. A continuous web machine was perfected at the beginning of the nineteenth century. About fifty years later came the inventions of groundwood and chemical pulp. The groundwood pulp was recognized to be very perishable.

Let's take a quick look at a wood fiber. It is built up from cellulose, which is known as a polysaccaride (poly — many, saccaride — sugar) and consists of sugar rings, each connected in the form of a chain. These chains are of varying lengths and lie parallel to one another to form rectangular "blocks" called micelles. Micelles are joined to form fibrils. Since the primary chains are of different lengths, a certain degree of porosity is present in the fibril. Fibrils are arranged in layers to make up a lamella. Lignin and non-cellulosic carbohydrates are embedded in and between the lamellae. Chemical pulp is made by treating the wood with acids or alkalies that remove the "impurities" from between the cellulose layers and leave just the cellulose. However, the cellulose structures are also attacked during the chemical treatment which results in a weakening of the fibers, therefore of the paper made from it.

However, the processes mentioned above broke the "furnish" bottleneck

(*Continued on page* 390)

Mr. Steinberg, paper chemist at The New York Times, *is engaged in technical work on paper, inks and metals. He is a member of the Technical Association of the Pulp and Paper Industry.*

[1] Paper presented before the Newspaper group, New York Chapter, October 22, 1951.

is Microfilm

WILLIAM H. OFFENHAUSER, JR.

Preservation by MICROFILM[1]

WILL ROGERS once said "It's the things people believe that just ain't so that cause most of the trouble in the world." Let us look into the facts about microfilm to find out whether or not we believe some things that "just ain't so."

It has been said that the maturity of a cultural age can be judged quickly by the volume of recorded material that is purposefully preserved for a future time. Let us, for the moment, accept that statement and look about to see what is being done to preserve important materials.

The recent technical advances in the broad field of human communications seem to indicate that we are moving forward at an increasingly rapid pace and are consuming a tremendous amount of record media materials for the purpose of recording in such materials the ideas we wish to perpetuate. In certain classes of such human communication a large percentage of such recorded material is being preserved, not because of an abstract wishful desire on the part of librarians and archivists — often considered dreamers in the earthy world of everyday commerce — to preserve a copy of the material for the cultural benefit of mankind, but rather in the interest of "the necessities of commerce."

Photographic film — including microfilm — is manufactured in the United States in pretty large quantities. During 1945, for example, 16 mm. movie film was manufactured at the rate of about 1,000 million linear feet per year. X-Ray film manufactured during the same period ran to about 110 million square feet. 35 mm. movie film was made at the rate of about 1,200 million linear feet per year. (In 1945 X-Ray film required much more labor to manufacture per square foot than did 35 mm. movie film; one square foot of X-Ray film requiring the labor equivalent of two and one-half square feet of 35 mm. movie film.) All the microfilm used during the same period, while large in the eyes of librarians and archivists, did not account for very sizable percentages of these values.

The manufacturing process used for all film is essentially a continuous flow process something like that of a steel mill. Changes in total production volume do not occur overnight; if greatly increased total quantities of steel are going to be needed, a lot of steel is needed for the mills on which it is to be made. If greatly increased quantities of one class of film are suddenly needed, the production of other kinds of film must be curtailed if manufacturing facilities are running at full output — as they are certain to do under the threat of a potential war. Due to the nature of the manufacturing process, all types of sensitized silver films are closely related.

Since 1945 something new has appeared in the commercial marketplace

Mr. Offenhauser, a leading consultant on motion pictures and television, is the author of 16 Mm Sound Motion Pictures. *He is now conducting research projects for Telenews Productions, Inc.*

[1] Paper presented before the Newspaper group, New York Chapter, October 22, 1951.

as a consumer of sensitized photographic film — television. Since 1945 the consumption of film for motion picture purposes showed first a post-war rise, and then, more recently, a decline in volume. The consumption of film for television did not exist at all during the last war, but since the commercial introduction of television it has increased by leaps and bounds until now it is one of the most important from the standpoint of present volume and probable future volume. The recording of television programs, usually done at present at the television broadcast station by photographing the face of a cathode ray (kinescope) tube, now accounts for a consumption rate of roughly 200 million linear feet of 16 mm. motion picture film per year. Related television uses, such as films photographed with motion picture cameras specifically for television transmission, account for further sizable quantities. Should you visit Hollywood today you would find numerous motion picture studios with well-known stars engaged in producing pictures either exclusively or primarily for television. Bing Crosby, for example, is a big name in this business; he is as well known in the industry for his television films as he is known to his radio audience for his race horses and his crooning.

Despite the fact that microfilm has not shown such a meteoric rise in volume of material consumed as has television does not imply necessarily that it is fundamentally less important. In a sense, microfilm as used by librarians and archivists presumes subject matter of higher-than-average cultural level and to our way of thinking as librarians may replace in quality what we may lack in quantity.

Before going into the technical nuances of my subject, I should like to suggest that I have a small quarrel with the title of this paper.[1] As an archivist in disguise, I should like to distinguish between preservation of the original thought content and format as recorded on the original record medium, and preservation of a facsimile of the original subject matter on microfilm. In referring to the former, I would suggest the word preservation and assume that the modifying adjective "primary" is implied wherever the word is used unmodified. Where a facsimile of the original is preserved as is done on microfilm, I would suggest the term "secondary preservation" as suitable. The use of these terms, I feel, should clarify our thinking about the subject. In the case of the Constitution of the United States, for example, preservation would refer to primary preservation only — the preservation of the original document. Preservation of a microfilm copy of that document, would require the term "secondary preservation" (by microfilm). The remainder of this article refers specifically to the secondary preservation of a facsimile recording of an original document, appearing on a strip of microfilm by means of direct photographing accomplished by a microfilm camera.

Aging

As the subject of the aging of such a strip of microfilm is concerned with the physical changes in the record medium associated with chemical changes that occur due to light exposure, oxidation and other causes, it is impossible to discuss the preservation of documents by microfilm recording without reference to the chemistry of the record materials involved. Since the training of the professional chemist and that of the professional librarian and documentation man gives rise to concepts and unique meanings in each field that frequently are not capable of translation from one professional language to another, an opportunity is afforded a cold outsider who has been engaged in another functionally related field, motion pictures, to bridge the gap with some of his still different language.

[1] Originally entitled: *Some Facts and Factors Affecting the Preservation of Certain Selected Materials by Means of Microfilm.*

To understand just what deterioration occurs in film due to aging requires a knowledge of the materials of the record medium, how they cooperate to form that medium, and a knowledge of the aging process itself. In the case of the former we run into difficulty—the amount of published data available to the lay public concerning the manufacturing process by which commercial microfilm media are currently manufactured is insufficient to furnish a complete story. Much information of this sort is in the category of trade secrets. Emulsion making for microfilm is an example of a well-kept trade secret. A person who uses such film in the capacity of engineer or chemist for a major user may acquire as a professional member of the craft certain information that he is ethically not at liberty to divulge to non-professional persons or to persons outside the craft. The situation in this regard seems similar to that of a news reporter who acquires off-the-record information. What follows is an interpretation rather than a precise and rigorous statement of the problem of the preservation of a strip of microfilm; it is hoped that this statement will be helpful to librarians and other users.

A record film medium consits of two major parts: the image-bearing sensitized material, and a vehicle or carrier. In the case of conventional microfilm of the silver emulsion type, the image-bearing sensitized material is in the form of a solid emulsion of gelatin with the light-sensitive silver particles in stable suspension therein; the thickness of the emulsion is about .001 of an inch. The carrier—a mechanical support called the base—is a slow-burning triacetate material that is .005 of an inch thick. Conventional microfilm is therefore .006 of an inch thick. This thickness is quite uniform.

The image-bearing sensitized material may be dispersed throughout the base itself rather than appearing as a surface layer on the support. Such film is not in general use for microfilm purposes. It is, however, frequently used for making diazo prints for industrial purposes; one of the well-known commercial processes is called Ozalid. Although I shall say no more about diazo dyestuff materials, don't put them out of your mind as they have some unique characteristics that recommend them highly for specialized applications—and *your* application might be one.

The first question to consider is the aging rate of the base. (Manufacturers of microfilm have encouraged the thought that "safety base is no more combustible than an equal volume of paper.") If the base deteriorates by aging at the same rate as unprotected common paper, there isn't much use in using microfilm for preservation. Fortunately film base that meets archival requirements, as microfilm usually does, is definitely better, for manufacturers have been quite conservative in their claims. Mr. Steinberg mentions the use of acetate sheeting as laminate material to preserve newspapers [see page 392] and acetate sheeting has much to recommend it. Let us not lose sight of the fact, however, that the physical characteristics of the film base, or of the acetate for that matter, depend upon the chemical composition of the material—and the composition of film base material is different for different manufacturers, as well as different for the same manufacturer at different times. This state of affairs is implicit in our economic system as it is a management objective (and a very desirable one from the standpoint of the use of materials) to improve year after year the quality of the product manufactured. As a generalization I think it is fair to say that the deterioration rate of film base currently used in microfilm is markedly slower than average paper and probably significantly slower than the most long-lived grades of paper commercially available. But I won't go farther with qualitative statements. If you want to "pin me down," you'll have to specify the chem-

ical composition of the particular materials that you have in mind before I can give you figures that are significant, relative to the preservation time span of a competitive material. If the plastic you wish to use for the laminate is chemically the same as film base and both are stored under identical conditions, there would be little to choose between them.

What about the aging rate of the emulsion? Before this question can be answered it is necessary to know something about the chemistry of the emulsion. In an emulsion, silver halides (usually bromides, iodides, etc.,) are held in suspension in gelatin. In development, the halides are reduced to metallic silver. Since silver is a metal whose aging characteristics are quite well known, we turn our attention to the gelatin. Gelatin is made from selected clippings of calf hide and ears, cheek pieces and plates; for photographic purposes all pieces must be free of bacterial and fungal infection. That looks suspicious; gelatin is an organic material and since it is subject to biological decay it is the biggest question mark in predetermining the probable life of microfilm.

Preservation of microfilm, then, has as one of its most important functions protection of the emulsion of the film from fungal and bacterial attack. If you notice an odd smell from your unprotected microfilm during the hot humid days of the summer, it is a good indication that "the little bugs" are at work and that the image in the emulsion is deteriorating at a rather rapid rate. The smell will be particularly noticeable when incubation conditions for fungi and bacteria reach that magic "85-85" level (85° F. and 85 per cent relative humidity) at which the little bugs really "go to town." Cycling of temperature, with its resultant condensation, produces a real feast condition for the little bugs. After a hot, humid day, the normal drop in temperature at night in a closed filing cabinet provides excellent condensation and incubation.

Why do we use gelatin and, if it is a real source of deterioration through decay (don't forget — the cow from which this gelatin came is dead), why not toss out the gelatin and replace it with one of those new-fangled plastic materials which seem to be endless in number? We are now in a bit of trouble; gelatin has a number of functions well beyond the obvious ones. They are both chemical and physical. The chemical are:

1. To act as a protective colloid to maintain the dispersion of the silver halides and to protect them from reduction by a developer without exposure of the film.

2. In solution during manufacture it enables a stable suspension of silver halide particles to be formed.

3. In the jelly state during manufacture it supports mechanically the microscopic particles of silver and permits soluble materials to act upon them.

4. It affects the sensitivity of the silver halide.

5. It combines with and thus removes the halogen liberated by the action of the exposing light.

The physical functions — no less important — are:

1. It acts to adhere to and cooperates mechanically with the base. (It used to be a common experience years ago — and a very disheartening one I might add — for a person to put a film in a tray or tank for development and find the film emulsion in the bottom of the tank when the film was ready to be dried. If you had ever had that experience, you would never forget it. People may experience it again when hot processing becomes more widely used; such things might occur when developing ordinary emulsions under hot processing developing conditions. (Temperatures are anticipated up to about 125°F.)

2. It shows minimum mechanical distortion when swelled (as during developing) and shrunk (as during drying and subsequent use when exposed to heat, etc.) Not only must it suffer

minimum distortion itself during such swelling and shrinking, but it must also cause the halide crystals and their corresponding silver nuclei to suffer minimum distortion and shift in orientation.

Whew! That sounds like a tall order. But gelatin does it. Is there something miraculous about a dead cow that makes all this possible with her bacteria-free cheeks, pates, etc., that can't be done with existing synthetics? If we put the question that way, I'm afraid that the answer is YES. If we want microfilm, let us continue our heavy beef-eating diets and avoid going vegetarian; we'll continue to have enough gelatin for our movies, television films, microfilms and others. We don't have equivalent synthetics at an equivalent price; maybe we don't have a full equivalent at any price — yet. But we haven't given up. Every day brings us nearer and nearer the goal of finding a substitute for gelatin. Incidentally, every day we learn more and more about that miraculous material. There are still many mysteries in the chemistry and atomic structure of gelatin for the solution of which we have no guide other than a blind faith in the ability of scientifically-trained men to discover the secrets of nature.

Emulsion

Now for a few thoughts about the emulsion. We have continually heard, if we are concerned with movie films, the term "fine-grain," but we don't ordinarily hear much about how fine "fine-grain" happens to be nor why it should be that fine. We don't hear very much about how fine the grain is in microfilm. Advertising that we read might lead us to think, because of the inuendo of the advertising message, that grain in microfilm is so fine that grain isn't a problem at all. The user of microfilm knows that "it just ain't so." Despite the experience of the user in this regard, microfilm is just about the finest-grained material regularly manufactured in commerce. Film manufacturers are steadily striving to find ways to make the use of still finer grain materials possible without unreasonable increases in the quantity of light required for exposure.

In the early stages of microfilming we took a great deal for granted that just wasn't so. Now we realize that the "ideal" material is that material which has the largest ratio of detail size to be recorded relative to the grain size of the film used — and the finest we can get still leaves something to be desired. Since we are now beginning to feel the pressure of more stringent quality requirements in the performance of microfilm and in the preservation of it, the 16 mm. film size, at first never questioned with regard to its adequacy in recording extremely fine detail, has now given way to 35 mm. at *The New York Times*. And in more critical applications, with respect to image quality, the *Times* is even now using 70 *mm.* film.

We can accomplish the same result by reducing the grain size in a film of a particular size as we can by increasing the width of the film by the same ratio. In a sense, just what we choose to do constitutes an engineering compromise the precise solution of which depends upon just how we expect to obtain the greatest result for the least money.

In the finest-grain emulsion known, the Lippman emulsion, the average grain diameter is about thirty millimicrons; the smallest grains are about ten and the largest about fifty millimicrons. In the Lippman emulsion there is no grain clumping — grain size distribution is very uniform and follows the normal probability distribution very accurately. At the other end of the practical grain size is high speed negative film (Superpan Press, for example); the average grain size is about three microns — about one thousand times as large as the Lippmann. Large grains tend to clump, the clumps acting something like grains which are the size of the clumped masses. Fortunately, film manufacturers have worked hard to keep clumping to a minimum. The big-

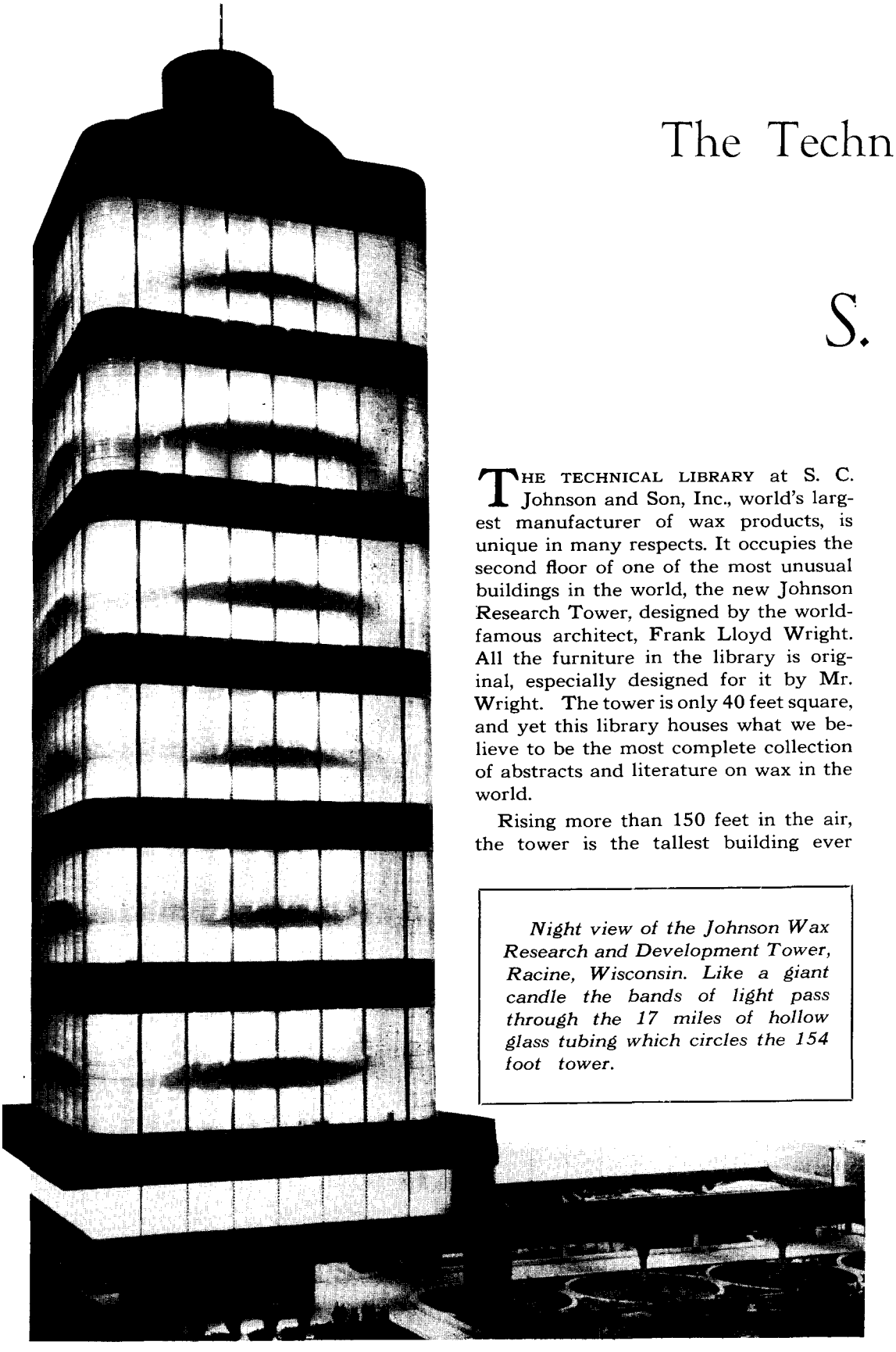
(*Continued on page* 397)

The Technica

S. C

THE TECHNICAL LIBRARY at S. C. Johnson and Son, Inc., world's largest manufacturer of wax products, is unique in many respects. It occupies the second floor of one of the most unusual buildings in the world, the new Johnson Research Tower, designed by the world-famous architect, Frank Lloyd Wright. All the furniture in the library is original, especially designed for it by Mr. Wright. The tower is only 40 feet square, and yet this library houses what we believe to be the most complete collection of abstracts and literature on wax in the world.

Rising more than 150 feet in the air, the tower is the tallest building ever



Night view of the Johnson Wax Research and Development Tower, Racine, Wisconsin. Like a giant candle the bands of light pass through the 17 miles of hollow glass tubing which circles the 154 foot tower.

INA M. KUZEL

Library *at*

JOHNSON & SON, Inc.

Makers of Johnson's Wax

erected without a foundation directly under the side wall; yet at ground level it is supported by an irregular oval base only 13 feet across at one point. Each of the fifteen floors is supported from the central core by a cantilever type construction.

Square floors alternate with round ones, the library floor being the only one without a mezzanine. At each of the square floors there are bands of brickwork, about three feet wide, which are the only breaks in the glass outer surface of the tower. These walls are made up of twenty miles of glass tubing, laid horizontally and separated by a special caulking strip; lining the interior are sheets of plate glass.

This beautiful walling adds to the impression of spaciousness in the library. Under the tubing all around the room is extra shelving, much of it enclosed in cabinets for storage of back journals. On top of these cabinets is a continuous row of fluorescent tubes covered by strips of plate glass. This lighting is not only decorative but practical, for it furnishes the lighting for the outer part of the library.

So many times plans for a special library are relegated to the last. This was not the case at S. C. Johnson's. Careful plans were made to allow adequate room for growth. The librarian was consulted as to preferences and needs, and all the furniture and equipment designed to fit those needs

The desk is the most amazing piece of furniture, for not even the architect's plans and descriptions had prepared anyone, including the librarian, for its combined beauty, uniqueness and convenience. Like all other furniture and shelving in the room, the desk is of American walnut. A cabinet was built in on both sides of the desk, the one on the left housing the 4 x 6 abstract cards, and the one on the right housing the 3 x 5 catalog cards for the book, reprint, patent and vertical file collections in the library. Shelves under these files are for frequently consulted reference books such as *American Men of Science, National Associations of the United States, Industrial Research Laboratories,* and foreign language dictionaries. This arrangement for the catalogs and reference books makes them convenient for both the librarian and the users of the library. Also for the librarian's convenience are three large swinging drawers at the right of the desk for current supplies, and two large storage cupboards underneath. On the left is the typewriter, resting on a shelf which extends under the top surface of the desk; behind the typewriter, under the armlike shelves which provide space for stationery and telephone directory, are electrical outlets for the clock and desk lamp.

Other distinctive features of the li-

Mrs. Kuzel is librarian of the Research and Development Library, S. C. Johnson & Son, Inc., makers of Johnson's Wax, Racine, Wis.

brary furnishings are the built-in cabinet for the reprint and vertical files, the round reading tables with shelf space into which the arms of the chairs can be pushed when not in use, a built-in dictionary stand, double book-stacks so arranged as to give the maximum amount of shelf-space, and a tiny, yet comfortable microfilm reading room. Extra items of convenience are the dumb-waiter, letter-chute and messenger service buttons, all located at the central core of the tower. The dumb-waiter has seemed to many of our visitors, I think, just "an extra gadget." Installed for the purpose of sending chemicals and supplies from floor to floor in the tower, it has also proved an invaluable library assistant. In just a few minutes we can answer a telephone request by sending material to any department in the tower via this dumb-waiter.

The speed with which literature can be provided has been of distinct value to the departments in the tower on numerous occasions: in getting out correspondence, sending telegrams, preparing for long distance calls and in getting additional material needed during a conference. The importance of the dumb-waiter, however, is not based solely upon the speed with which an article can be sent, or the time saved during its transmission. There are many times while an experiment is in process that a researcher actually cannot leave his work to go to the library. With the dumb-waiter system he can call the librarian, ask her to select the proper reference and transmit it, and obtain the literature he needs without leaving his floor.

Wax Abstract File

The most special feature of the library at S. C. Johnson's is the wax abstract file. When Dr. J. Vernon Steinle, now research and development vice-president, came to Johnson's twenty-five years ago he began collecting all the articles he could find on wax. Abstracts of the articles, either original or from *Chemical Abstracts,* were typed on 4 by 5 cards. Out of Dr. Steinle's interest and foresight has grown what we believe to be the most complete abstract file on wax to be found anywhere. Dr. Steinle devised a classification scheme for the file, using the mnemonic features of the Dewey Decimal system. Keeping this file up to date requires a careful searching of the abstract journals as well as of the current technical literature, but it is an interesting task and has proved its worth many times.

DR. J. VERNON STEINLE
Research and Development Vice-President, S. C. Johnson & Son, Inc.

Through the years, with the increasing volume of technical literature, the file has grown in size until now there are about six thousand abstract cards. With its growth in size, the value of the file for a quick but comprehensive survey has also increased, for it gives detailed information on all phases of wax and wax products. The legal and patent departments recognize this as the authoritative file in searching for information on a wax research or development problem. The organic chemistry and physical chemistry research departments use the abstract file for making initial searches when starting work on a new product, and for filling in ideas for a program of investigation. It is also the first place the librarians consults when answering reference questions or preparing bibliographies on wax.

Although the most individualized part of our library began twenty-five years ago with the first wax abstract card, it was not until 1946 that the first full-time technical librarian was employed. This is in large part accounted for by the fact that during the last twenty years there has been an increase in the Research and Development Division from five technical personnel to over

eighty. In February, 1945, there were twenty-nine technical people and in May, 1951, there were eighty-four.

The efforts in pure research have expanded much more than these figures would indicate. As the company became dominant in the field of wax products and adopted a long range attitude on research and development in the field of wax, Dr. Steinle's plans for broad technical coverage of the wax field, including library searches and material, were carried out, and the library became a necessary and vital part of the division. Having a technical library within the organization has made it possible to give the researchers access to a more thorough coverage of the field than would be possible otherwise.

Library Collection

As in most special libraries, the nucleus collection was an assortment of accumulated books and journals from various offices and laboratories. The initial task of the first librarian was to set up a detailed procedure manual before beginning the more routine tasks of cataloging and classifying the books and collating the journals before sending them out to be bound.

The small nucleus collection of 1946 has now grown to more than two thousand volumes, including the bound journals. We have among our reference books a complete set of Beilstein's *Organische Chemie*, Mellor's *Inorganic and Theoretical Chemistry, International Critical Tables*, and Landolt-Bornstein's *Physikalisch-Chemische Tabellen*, books which are generally found only in the larger chemical, university or public libraries. The Library of Congress classification scheme is used, and there is a dictionary catalog for the books. The library budget includes an adequate amount for books, so that a volume suggested by any member of the divsion, is usually purchased if it is felt that there will be a recurrent need for the material. If the book requested seems to be far from our field, and to have only a one-time use, we borrow it on inter-library loan whenever possible.

Between seventy-five and eighty technical journals, thirty-four of which we bind, come into the technical library each month. In December of each year we send a listing of the journals we will receive the following year to all technically trained members of the division, asking them to check only the journals which they are interested in seeing regularly. After the lists are back, a sample routing sheet is made up for each journal. These are kept in a loose-leaf notebook so that changes can easily be made as requested throughout the year.

This system makes it possible to trace readily a journal that is in circulation. Perhaps the best proof of its workability is that we were missing only two weekly issues of 1950 this year when we were preparing our journals for binding.

Before routing the journals, the librarian scans each one rapidly for all wax references and other items of interest to specific individuals, marking the page numbers on the routing list. A copy of every article on wax appearing in these publications is ordered immediately for the library files. When no reprints are available, we send for photostats or microfilm copies. We also send for soft copies of all the United States, British and French patents on wax. As these are received the abstract, author and patent cards are stamped "Copy On File" or "Microfilm On File" and the material itself is filed according to class number in the patent or reprint files.

INA M. KUZEL
Librarian
S. C. Johnson & Son, Inc.

Any member of the division who wishes a reprint of an article, a patent, or any other printed material fills out a "Publication Request Form" which he

sends to the library. Before there was a library, the secretary of each department ordered such material. The present system makes procurement of the material more systematic and avoids duplication. It also has another decided advantage. Many times after a chemist had finished the article he ordered, it was either discarded or lost sight of in a pile of other papers. Now when he no longer has an immediate use for the material, it is returned to the library. For the many and varied reprints, photostats and patents which are returned to the library in this way, we are establishing a subject file. *Subject Headings For Chemical Libraries,* published by the Special Libraries Association, is our guide for this subject file and we write in our own additional entries in the margin. A dictionary catalog indexes the subject file.

The library receives three copies of each company technical report. One of these is the vault copy, another is filed chronologically, and the third is filed according to a classification scheme which is being revised at the present time. We also maintain files of all government specifications which have ever been of interest to our company, and order new specifications which we think may be of interest in the future.

Any material in the library may be charged out with the exception of the microfilm. There is no time limit on withdrawals, and some of the material is kept on permanent loan in the departments with the understanding that it may always be called in by the library for temporary loan to another individual or department. Twice a year a notice is sent to each individual listing all the material charged out to him at that time. This usually results in a large influx of material that people no longer need, and a request for new material to be put on permanent loan.

The Library Letter

What began as a monthly list of new books received, and then became a bimonthly "Library Letter," is now a monthly release. This has proved to be an excellent medium for conveying to the staff news of any new acquisitions and developments in the library (for example, the establishment of the subject file for miscellaneous reprints), and for recovering any stray journals or other material. Several times we have received excellent suggestions from the staff members as to what they would like to have included in the "Library Letter." One of these suggestions was to include each month lists from the various sections in the division of the new materials they received that month. The letter is sent not only to all members of the Research and Development Division but to any interested members of the company. We have found that it stimulates an active interest in the library, increasing not only the number of withdrawals but also the number of reference questions.

Mrs. Kuzel at work behind her desk. It was designed especially for the library.

The files section routes all journals (some five hundred a month) which do not belong to the Research and Development Division, and maintains a card catalog for all books in departmental libraries outside of the division. Two deposit collections from the Racine Public Library are maintained at S. C. Johnson's, one in the factory and one in the administration building, for recreational reading for the employees. These other library facilities leave the technical library free to concentrate its efforts upon reference and research work.

It is only natural that the library should be used most extensively by the Research and Development Division and the legal and patent departments. Often at one stage in a specific research program the entire work plan may be greatly influenced by one article of literature which is available and put to use because the library is performing its function. A relatively inexpensive literature search may be the means of preventing the expenditure of a much larger sum than necessary on a research project in the laboratories.

We have tried with some success to make departments outside the division feel that the library is also at their service and ready and willing to help with any technical problems they may have. The export office may call us to find out about a packaging specification; the economist's office, for some figures in a particular issue of the *Oil, Paint, and Drug Reporter;* the advertising department, for biographical and geographical facts and figures; plant engineering, for an article containing a flow chart.

Interlibrary Loans

Of course no specialized library would have room either in the budget or on the shelves for everything. No article on the technical library at S. C. Johnson & Son, Inc. would be complete, therefore, without paying tribute to the courteous and ever-ready service and cooperation of the reference librarians at the Racine Public Library and the librarian at the Young Radiator Company in Racine. We are also grateful for the privilege of being able to borrow material from the Milwaukee Public Library through the Rac-Mil (teletype) service, and from the John Crerar Library in Chicago. Most of our interlibrary borrowing is done through the Rac-Mil service. Our photostats are for the most part ordered from the Department of Agriculture Library with American Chemical Society coupons, but if there is a photostat we need in a hurry it is wonderful to be able to telephone to the Crerar Library and have the material here within one or two days.

The comprehensive coverage of our technical library in our own and related fields, supplemented by the privileges of interlibrary loan and rapid photostat service for material we do not have here, have combined to give the technical personnel extensive literature facilities far beyond those one would expect to find in a library this size.

Perhaps one of the most sincere compliments our library has received was paid it by a woman visitor who gazed all about the room, then back at the desk with its files of abstracts, and said, "My! I didn't know it took all this to make a little wax."

ROBERT C. SALE

Is Binding the Answer?[1]

Mr. Sale is chief librarian, Research Department, United Aircraft Corporation, East Hartford, Connecticut.

THE SPACE PROBLEM in libraries, specially research libraries, is becoming increasingly serious, and many solutions are being offered and put on trial. Various types of micro-reproduction are in use, such as microfilm, microprint and microcards. An experiment is being tried at one of our large government research centers in the use of facsimile printing in order to reduce the number of original copies necessary to be housed. We are today witnessing the increasing use of large cooperative storage centers, many of which use relatively low-cost sites on which to erect appropriate buildings. Such a plan has been in use for a number of years here in this area under the name of New England Deposit Library, and even now a new building is being completed near Chicago for the Midwest Interlibrary Center which consists of thirteen large university library members.

The problem of space is no more pressing in a university or college research library than it is in many special libraries such as ours at United Aircraft Corporation. We are a small library as libraries go, but to be a research library, which we believe is our main function, we do require space and we must plan for gradual expansion.

Need for an Established Policy

While the growth problem had long been recognized by us, we failed for some time to establish a definite policy regarding the fate of our periodicals and reports collections. A couple of years ago it became evident that we must apply some serious thinking to this problem in order to establish a general policy which would be as permanent as most policies are in these times. Because periodicals and reports grow at a rather alarming rate we found that one of the following three policies had to be established:

1. Discard much of our material
2. Retain the material in some type of micro-reproduced form, or
3. Retain it by some means in the original form.

It is axiomatic that a library serving research people must discard very sparingly for it is impossible to foresee when a document or article that hasn't been requested in five years will suddenly be demanded *as of now*. We do discard material, of course, but it is done carefully and, when compared to the whole, in small quantities. Therefore, for us, indiscriminate or wholesale discarding was definitely not the answer.

We next surveyed a cross section of our clients as to their probable use of publications in micro-reproduced form. We found an attitude of antagonism at the mention of microfilm or any type of reduction that required magnification to read the material.

When a client requested several references, some of which were regular size documents and some of which were microfilm, we found that, for the most part, he would avoid the micro-film and use only the full size material. Our clients will seldom use the microfilm even

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[1] From a paper presented before the fifteenth annual convention of the Library Binding Institute, Hotel Statler, Boston, Massachusetts, May 24, 1951.

JOHN EMMETT BURKE

Professional Training for Special Librarians

Mr. Burke is librarian, George Peabody College for Teachers, Nashville, Tennessee.

FEW AREAS OF LIBRARIANSHIP present the variety of professional occupations as does the field of special libraries. A wide range of subject areas running the whole gamut of industrial and commercial America calls for a system of libraries wherein each differs greatly from the other in content, purpose and service. Although special libraries may differ in book, periodical and pamphlet resources; and specific as they may be in the clientele they serve, they are nevertheless bound together in a common desire to perform their duties and exchange ideas for a better and more efficient service.

However significant special libraries seem to be in the present industrial and commercial picture of America, the lack of specific opportunity for preparation stands out as a blind spot in the total usefulness and progressive development of these libraries. The lack of specialized training facilities is due largely to the fact that special libraries are so varied in character and so different in activities that it is practically impossible to plan a course useful to all special librarians. However, a brief analysis of the opportunities available for those desiring to enter the field would indicate that a dearth of well-trained librarians to staff adequately present and future special libraries exists to a degree sufficient for grave concern.

If special libraries are to continue on a high level of performance; and if their services are to advance and expand quantitatively and qualitatively, more provision for appropriate training or for a background of training is a vital necessity. Where today and yesterday an unskilled or informally educated librarian could get along, it may well be that in the future a librarian with a professional background will be required to direct special libraries. If those concerned with the progress of special libraries and the training for special librarians do not recognize this situation and chart definite action to provide adequate preparation, then perhaps industries and commercial institutions, their fostering agencies, will.

Charting a Background of Preparation

Before considering the limited opportunities of preparation now available to train candidates for special librarianship, it might be advisable to point out a background of preparation that would establish on a solid basis the training essential for a librarian to operate effectively the library that now falls under the general term "special library."

At the very outset it must be understood that certain vocational and technical aspects of a specific job can be learned only in the actual situation of a special library itself. This is the major premise in any consideration of what constitutes preparation for special librarianship. On the other hand, it must be acknowledged that a grasp of the fundamentals of library science, the formulation of and an adherence to a sound philosophy of library service and a mastery of techniques applicable to a wide variety of library situations together with actual on-the-job experience provide some of the professional requisites of the special librarian.

That most, if not all, desirable as-

pects of such a training could be learned on the job, tailor-made to a specific library situation, is not to be denied. The large percentage of successful librarians without formal professional education in some of these areas indicates that the degree of capability obtainable in a real work situation combined with serious self-improvement proves adequate in some instances. However, it may be hazarded that these same successful librarians would be the first to point out the handicaps of such a condition as well as the first to emphasize the desirability of professional training for special librarians.

Special Libraries Must "Click"

In no area of librarianship is success so vitally necessary as in a special library. In no other library field must a library justify its existence more than a special library that is part of an industrial and commercial plan. Brought into existence to fill a need, the special library and its staff must render adequate service to justify and continue its existence. The special library at no point represents a recreational or cultural agency, but rather serves as a vital link in promoting efficiency of operation or advancing quality of research. On such premises must a special library and its staff not only serve present needs but project themselves into patterns of future resourcefulness and usefulness.

Training librarians for such responsibilities is a task of gigantic proportions. To state the basis of such training is to point out how a special librarian differs from his colleague in the general library field. Briefly put it may be said that a special librarian emphasizes a background of subject knowledge and an experience with appropriate subject tools. The increased knowledge may have been learned in the library itself.

Desirable Qualifications Listed

What special librarians themselves recognize as desirable training was stated in a panel discussion at Washington, D. C. that was reported in SPECIAL LIBRARIES in the November, 1948 issue. A summary of the highlights of training qualifications listed by this group follows:

1. Library training and knowledge of subject matter constitute the ideal.
2. A division of opinion exists as to the adequacy of in-service training as a substitute for library school or formal training.
3. A knowledge of languages, especially Latin, is desirable.
4. A realization of the importance of the public relations aspect of the library must be put to constant practice.
5. Desirable traits of personality — alert mind, attractive appearance, amiable disposition — are regarded as requisites.

No doubt, the participants in this panel agreed on some of the basic requirements, such as a college education, stressing when possible some of the aspects of science and business. In addition, it is the consensus of opinion of those who have written on the subject that a knowledge of subject areas will give the "know how" in bringing the literature of a field to the state of an apt and reliable information guide. The practical aim would seem to be graduation from an accredited library school plus some actual experience in a library situation. Since so many special libraries cater to the needs of business establishments, some work in business subjects would be also a desideratum.

Role of the Library School

The role of the library school in the education of special librarians is significant. Needless to say many who have studied this problem are in accord that the training is best handled by library schools which will train candidates in the basic library courses and in addition emphasize the philosophic and administrative aspects of library work. Since the special librarian differs from his colleague in the general library field by his background of subject knowledge and in his familiarity with specialized subject tools, an over-all picture of the knowledge of sources should be secured. While this knowledge can seldom be acquired so as to be pinpointed to a specific library situation, the library school graduate nevertheless should

have a thorough grounding in the fundamental resources of printed communication.

The question of how library schools in the United States are cooperating to prepare special librarians is one which has provoked thought, discussion and some degree of action. While the need for a professional degree in library science is recognized as highly desirable, if not a necessity, library schools have gone beyond this to provide training in specific areas. An investigation of the catalogs of the thirty-six library schools listed as accredited by the American Library Association in the November, 1950 issue of the *A.L.A. Bulletin* reveals that twenty-one or 58 per cent of these offer courses which prepare for special librarianship. The total number of course offerings is fifty-two. Of these twenty-one library schools offering courses for special librarians . . .

Eight offer one course;
Five offer two courses;
Three offer three courses;
Two offer five courses;
One offers seven courses.

More Than Schooling Needed

No amount of education or training can equip the special librarian with those qualities of mind and heart which manifested externally bespeak success in dealings with the public. Alertness and openness of mind, innate inquisitiveness, amiable disposition, the "stick-to-itiveness" to bring a problem to a happy solution, as well as the desire to give the ultimate in reasonable service are personal characteristics that must be cultivated by the librarian. Service in a special library must oftentimes transcend the limits of time set by an established schedule; to serve in a special library might mean also the development of certain skills, such as public speaking, so as to promote effective public relations.

Needless to say, there is another factor having a bearing on education for special librarianship. The question of salaries looms most pertinent in any discussion dealing either with good service in special libraries or in attracting to or holding in this area qualified personnel. The second SLA salary survey of 1947 indicated that $3100 was the most prevalent salary. The general picture, as reported by Mrs. Stebbins in the May-June, 1950 SPECIAL LIBRARIES, revealed that the mean of librarians' salaries was $528 higher in 1947 than in 1946. While it is true that education is the most important factor in securing a good salary, it is also inversely true that good salaries constitute a significant element in attracting to special libraries persons eager to qualify for positions by the attainment of high standards of professional education. The axiom of business — that you get what you pay for — may well be applied here. Any consideration of desirable future development in the education of special librarians may well start in the realm of salary improvement as a jumping-off point.

Conclusions

Certain definite conclusions regarding the training of special librarians seem to be justified in the light of the tremendous growth of special libraries in the past forty years. From a small membership of 128 in 1910, the Special Libraries Association has grown to represent a group that now totals 4,653.[1] Thus far it would seem that great divergence of opinion on the preparation required for special librarianship exists. While it is true that such libraries are varied in character and activity, certain common characteristics stand out as desirable in the men and women called upon to operate special libraries. The training of qualified special librarians rests upon the following basic assumptions:

1. Special libraries must justify their existence by good service.
2. The future of special libraries is a future linked with satisfactory performance.
3. Good service is not a day-to-day proposi-

(*Continued on page* 395)

[1] Total number of paid memberships as of September 30, 1951, as reported in the regular quarterly survey.

Report of the Nominating Committee

1951-1952

The Nominating Committee presented to the Executive Board the following candidates for office, all of whom have accepted the nomination:

President

ELIZABETH FERGUSON
Institute of Life Insurance
New York, New York

First Vice-President and President-Elect

ESTELLE BRODMAN
U. S. Army Medical Library
Washington, D. C.

MRS. LUCILE L. KECK
Joint Reference Library
Chicago, Illinois

Second Vice-President

DR. BURTON W. ADKINSON
Library of Congress
Washington, D. C.

ALLEN G. RING
Mallinckrodt Chemical Works
St. Louis, Missouri

Treasurer

EDWARD H. FENNER
Business & Economics Department
Enoch Pratt Free Library
Baltimore, Maryland

MARTIN L. LOFTUS
Joint Bank-Fund Library
Washington, D. C.

Secretary

KATHARINE L. KINDER
Johns-Manville Research Laboratory
Manville, New Jersey

HAZEL KIRK LEVINS
Mutual Benefit Life Insurance Company
Newark, New Jersey

Director for Three Years

MRS. LOUISE T. JACKSON
Geophysics Research Library
Humble Oil & Refining Company
Houston, Texas

NELL STEINMETZ
Pacific Aeronautical Library
Los Angeles, California

Director for Three Years

MRS. FLORENCE ARMSTRONG
Ross Roy, Inc.
Detroit, Michigan

EUGENIA P. TENNEY
International Minerals & Chemical Corp.
Chicago, Illinois

Director for Two Years[1]

LAURA M. MARQUIS
Mellon National Bank & Trust Company
Pittsburgh, Pennsylvania

HELEN MARY PYLE
Public Relations Department
Sun Oil Company
Philadelphia, Pennsylvania

Continuing to serve on the Executive Board for 1952-1953 will be Grieg Aspnes as immediate past-president, and Margaret Kehl, Kenneth Fagerhaugh and Robert Grayson as directors whose terms have not expired.

Further nominations may be made upon written petition of ten voting members in good standing. Such petitions, accompanied by written acceptances of the nominees, must be filed with the executive secretary of Special Libraries Association at Association headquarters not later than three months prior to the annual meeting.

Respectfully submitted,
ROSE BOOTS
JOLAN FERTIG
THELMA HOFFMAN
W. L. POWLISON
SARA M. PRICE, *Chairman*

[1] (To fill unexpired term of Phyllis Foreman, resigned).

CHAPTER —— *highLights* —— DIVISION

CHAPTER HIGHLIGHTS

Congratulations to the COLORADO Chapter! Our twenty-sixth, organized in April, has just published the first issue of *The Columbine Special,* which gives promise of being both timely and attractive. The chapter has just begun work on a directory of special libraries in the state. It will contain information about each library, special collections, hours, extent of service and size of staff. Organized with forty members, Colorado lists seven new members added. A membership directory has also been issued.

Joint meetings appear increasingly popular. These are most frequently planned in conjunction with a state library association convention. The Colorado members held a panel discussion on public relations at their state meeting in Colorado Springs. CONNECTICUT members met at Swampscott, Mass., during the meeting of the New England Library Association. They also planned for a joint luncheon with BOSTON members.

The second ILLINOIS meeting of the season was held in conjunction with the ILA-ILTA fall conference. PITTSBURGH and PHILADELPHIA members joined forces at the Pennsylvania Library Association conference to interpret special library objectives and services to those who are not SLA members. The SAN FRANCISCO and SOUTHERN CALIFORNIA Chapters held a joint luncheon and afternoon meeting during the California Library Association convention in San Francisco to which PUGET SOUND members were also invited.

Corning Glass Center was the scene of a joint meeting of the WESTERN NEW YORK Chapter and glass librarians. In addition, there were visits to the library and tours of the center.

Although NEW YORK'S October meeting was not a joint effort, it was in effect a joint meeting, with visitors from a number of chapters in town for the Executive Board and Advisory Council session. President Aspnes spoke briefly and Mrs. Elizabeth Owens acted as moderator for a personal finance forum, with speakers presenting the advantages of life insurance, bank deposits and investments.

Plans are under way to compile and publish a complete list of chapter publications. There-

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DIVISION HIGHLIGHTS

Several recommendations and decisions of interest to divisions were made during the meetings of the Executive Board and Advisory Council, held in New York, October 18-20. One of the most important actions taken by the Executive Board was the allotment of a larger sum to each division for necessary expenses. This will be about three times the former allowance. This decision is largely due to the study made last year by Sara Price, past D. L. O.

At the division chairmen's luncheon it was decided to hold a school for incoming officers during the convention each year. This excellent idea, instigated in 1950 by the Science-Technology Division, will be association wide.

Another recommendation concerns division representatives within chapters. After consultation with Helen Pyle, chapter liaison officer, it was decided to adopt the following procedure. Outgoing division chairmen will recommend division members within chapters to the incoming chapter presidents. The presidents will make the appointments. Exceptions will be in those chapters large enough to have groups, as in New York, or where there is no representative, as sometimes occurs in smaller divisions.

The preparation and publication of a manual of division procedures was agreed on by the Executive Board. It is planned to have this available for incoming officers at the 1952 convention. The committee will include members of the Division Relations Committee; the division liaison officer; Katherine Kinder, librarian, Johns Manville Research Laboratories; and Alice Wells, librarian, American Airlines.

ADVERTISING DIVISION: Librarians have once again successfully participated in the program of a national association.

This year, for the first time in its history, the American Association of Advertising Agencies included a session devoted to "The Agency Library" at its Eastern Annual Conference, held at the Hotel Roosevelt, October 30-31, 1951.

Delphine V. Humphrey, librarian of McCann-Erickson, Inc., New York, was asked to plan and conduct the meeting. With a com-

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From the President's Desk:

You and your next SLA convention

If your letters are any indication, you want from your next SLA convention:

MORE time for more division and section meetings. ("I go to meet and hear other people in my field of interest. Give me more time with them for our common problems.")

MORE "know-how" and "do-how" in these meetings to justify the time and money one spends. ("Last year I hid the program from my boss so he would let my assistants go.")

MORE tightly scheduled meetings so that one can hear and see more with less wasted time.

LESS time (at least during the day) devoted to association and division business meetings. (". . . a bore at most. Too many people talking on too many trivialities . . . .")

LESS stress on the social and entertainment sides of the convention. ("Bless the Convention Committee . . . but it's never as hard to find fun as it is to find a really worthwhile meeting.")

These are some of your remarks. They pose some of the serious questions your representatives are now wrestling with as they work long hours on the program for the 1952 convention in New York City.

Will you be there? You should be. It is your best opportunity to rub shoulders and ideas with the most alert group of librarians in the world. But you won't be there if the convention doesn't fill a deep, practical, professional need; if it doesn't promise to help you be a better special librarian after you return home.

The convention planners need your help. They need to know much more about what you want — and what your employer expects — from the convention of a top professional organization to make your attendance worthwhile.

SLA conventions are made for you; you alone can tell if they fill your needs. Decide what YOU want and then tell someone about it. That "someone" may be the Convention Committee (Ruth Crawford, chairman), your division convention committee, your representative on the Advisory Council, or members of the Executive Board.

As an active, working democracy, SLA depends on your voice to tell your leaders what you want. Now is the time for you to speak up for better conventions and a better SLA.

GRIEG ASPNES, *President*

Off the Press[1]

NICKNAMES OF AMERICAN CITIES, TOWNS AND VILLAGES, Past and Present, by *Gerard L. Alexander*. New York: Special Libraries Association. 1951. xiv + 74p Planographed. $2

This latest SLA publication offers the most complete listing of American city, town and village nicknames ever assembled. Organized into two sections, it presents a listing by states and cities and an alphabetical listing by nicknames. It is an important and valuable addition to reference works on Americana.

The large number of people who have long felt the need for a convenient source listing the nicknames of American cities will welcome this volume. Here is a practical working tool designed to serve those who wish quickly to ascertain the nickname of a particular city, identify a city known only by its nickname or simply derive pleasure in scanning the large variety of nicknames expressive of such sentiments as affection, derision, familiarity, pride, vanity or conceit.

Nicknames of American Cities is an authoritative reference source containing more than fifteen hundred nicknames. It is a handbook of value to editors, writers, speakers, advertisers and researchers as well as a source of interesting information for the idle curiosity of the man in the street.

Mr. Alexander, an SLA member, is presently with the Map Division of the New York Public Library. While this compilation can in no way be considered complete — a goal difficult of attainment — it is much more than a good beginning. The entries represent American city, town and village nicknames of more or less frequent occurrence in newspapers, periodicals, maps, radio and literature and will enable the user to answer hundreds of questions concerning nicknames in a matter of seconds.

As was remarked above, the listing is not exhaustive. It is expected that users across the nation will know of other nicknames that should be included in a work of this nature. Mr. Alexander will welcome your communications concerning subject matter. Such mail should be addressed to the author at the New York Public Library, Fifth Avenue and Forty-second Street, N. Y. Orders for the book should, of course, be addressed SLA headquarters, 31 East Tenth Street, New York 3, N. Y.

A CASE STUDY IN PERSONNEL SELECTION: A Civil Service Examination for Director of the Chicago Public Library, by *Arthur V. Wolfe*. Urbana, Illinois: University of Illinois Library School, December, 1951. 12p Mimeographed. Single copies free.

The latest of the *Occasional Papers* issued by the University of Illinois Library School. Shows the advantages and disadvantages of Civil service by describing and analyzing the recent examination for director of the Chicago Public Library. The author is director of test construction, Chicago Civil Service Commission.

DAY IN, DAY OUT WITH LOCAL 3, IBEW. A Study of Local Union Government and Administration, by *Maurice F. Neufeld*. Ithaca, New York: New York State School of Industrial and Labor Relations, Cornell University, June, 1951. 49p Free to residents of New York State; $0.15 to others or in bulk.

A bulletin on the government and administration of a union local, based on a detailed study of Local 3 of the International Brotherhood of Electrical Workers of New York City.

Professor Neufeld, of the Cornell school's faculty, gathered the material by attending meetings of the local, interviewing union officials and members and observing the effects of the administrative processes on the members.

This is the first in a series of studies that will be made by members of the school's faculty on history and administration of international and local unions.

A DICTIONARY OF ANTIBIOSIS, compiled by *Leonard Karel* and *Elizabeth Spencer Roach*. New York: Columbia University Press, 1951. 373p $8.50

This dictionary aims at providing a comprehensive and authoritative reference volume for workers in the medical and biological fields of antibiosis.

For each antibiotic substance is listed, when available, the source of the substance, method of extraction, chemical and physical properties, spectrum *in vitro* and *in vivo*, in some cases structural formulas, and toxological, pharmacological and clinical results. In addition

[1] *Where it is possible the editor has given prices for publication noted in this section. The omission of a price does not necessarily indicate that the publication is free.*

there is a lengthy bibliography arranged alphabetically according to authors, with appropriate cross-references.

Dr. Karel is a member of the staff of the Division of Research Grants, the National Institutes of Health, United States Public Health Service, and acts as Executive Secretary to the Pharmacology Study Section. Mrs. Roach serves as his assistant.

EMBRYOLOGY OF THE VIVIPAROUS INSECTS, by *Harold R. Hagan.* New York: The Ronald Press Company, 1951. 472p Illustrated. $6.50

This volume has been designed to fulfill three functions: as a text for the young entomologist, as a source book for the professional entomologist or general zoologist, and as a reference tool for public health and applied research workers who desire a knowledge of the embryogenies of viviparous hexapoids. Also presented is a comprehensive bibliography and survey of earlier papers on viviparity, an historical introduction to each species or group and a thorough treatment of the known embryogenies.

Mr. Hagan, an associate professor of biology at the College of the City of New York, has included many hitherto unpublished contributions of his own, particularly on maternal and fetal adjustments to the viviparous condition. The beginning student is oriented by introductory chapters, and both he and the advanced reader are guided by detailed subsequent chapters to intelligent interpretation of events in oviparous as well as viviparous development.

The volume is a significant contribution to entomological literature and has been awarded an A. Cressy Morrison prize by the New York Academy of Sciences.

FELL'S PROFITABLE STAMP GUIDE, by *Franklin R. Bruns, Jr.* New York: Frederick Fell, Inc., 1951. 128p $1.50

As Curator of Philately at the Smithsonian Institution, Mr. Bruns is eminently qualified to write upon the various aspects of stamp collecting. He is also the stamp editor for the *New York World-Telegram & Sun* and Philatelic Adviser for the Republic of Liberia.

This book is an inexpensive and reasonably complete guide, written for those who desire information on collecting, selling and evaluating stamps. The author covers such subjects as: *How to start a stamp collection; How to sell stamps; How to speculate or invest in stamps; Rarities; Design and production of stamps;* and *History of posts and stamps.*

Both the amateur and the more experienced collector will find material of interest in this volume. Historically, stamps for postage purposes first appeared in Great Britain in May, 1840. Officially the United States was the seventh nation or political unit to issue postage stamps, beginning operations in July, 1847; *unofficially, however, it was second,* as a private post operated in New York by Alexander Grieg and Henry Windsor as early as January, 1842. Because of his official post with the Liberian government, Mr. Bruns is able to supply a great many interesting facts relative to the design and production of stamps. This wealth of background material makes the book of value to the non-collector as well as to those for whom it was obviously meant. The many illustrations, brief bibliographies and a glossary of terms are additional features of value.

HOW TO PROFIT FROM THE TOURIST BUSINESS, by *C. P. Holway.* Milwaukee, Wisconsin: Jay Rathburn Associates, 1951. Offset. 64p $1.50

Written as a guide for communities and forward looking citizens, this book outlines the profit opportunities in the American tourist business and suggests practical steps by which communities can make themselves more interesting and attractive to tourists. There is considerable emphasis on beautification projects and other natural improvements which serve not only to attract tourists but also add considerable enjoyment and pleasure to the lives of the local inhabitants.

HUNGARIAN TECHNICAL ABSTRACTS. Budapest: Hungarian Central Office for Technical Documentation. Quarterly.

A quarterly bulletin publishing abstracts in English, German and Russian on outstanding articles featured in Hungarian technical trade literature.

It may be obtained either on an exchange basis or purchased by subscription.

INFANT CARE. Children's Bureau Publication No. 8. Washington, D. C.: Federal Security Agency, Social Security Administration, Childrens Bureau, 1951. 145p $0.20 [Order from Superintendent of Documents, Government Printing Office, Washington 25, D. C.]

A completely revised version of a book that has sold more than 28,000,000 copies since it was first published in 1914. This latest edition is an attempt to bring together increased knowledge about what is good for children from birth to their first birthday. It reflects suggestions from over seventy reviewers — pediatricians, general medical practitioners, nurses, social workers, psychiatrists, nutritionists and parent-educators. It takes into account what rural and urban mothers and fathers wanted the book to talk about. Changes in advice on

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Have you heard....

Tempus Fugit

There is precious little time left between now and the first of next year, BUT if you take out your life membership before the new dues go into effect on January 1, 1952 you will save exactly $150.

Until December 31, 1951, the old life membership rate of $100 remains in effect. On the first of the year the new dues rate will raise the cost of a life membership to $250.

This type of membership is for those who desire to enjoy all the rights and privileges of Active members by the payment of dues at one time and so avoid further financial obligation. Included with a life membership is a subscription to SPECIAL LIBRARIES, affiliation with one division and one chapter, and the right to vote and hold office.

Why not take advantage of this opportunity? Remember: *Hurry up and SAVE!* Become a Life member today!

Phyllis Foreman Resigns Directorship

Phyllis L. Foreman, librarian of the Hydro-Electric Power Commission of Ontario, Canada, and a recently elected director of SLA, announced, at the fall board meeting her desire to resign her office with the association. President Aspnes accepted the resignation with regret and stated that it would become effective October 25, 1951.

In tendering her resignation, Miss Foreman at the same time announced her forthcoming marriage, and that as she would be leaving the profession did not feel that she should therefore continue to serve as a member of the Executive Board.

Gertrude Low, librarian, John Price Jones Company, New York, was chosen to succeed Miss Foreman. Miss Low's appointment was effective October 26, 1951 and will run through May 29, 1952. At that time a duly elected officer will be installed for the remainder of the three year term.

Attention, Please

Copies of the May-June, 1951 issue of SPECIAL LIBRARIES are needed at headquarters. It would be much appreciated if those members who no longer desire to keep this number would forward their copies to Mrs. Kathleen B. Stebbins, Executive Secretary, Special Libraries Association, 31 East Tenth Street, New York 3, New York.

Dr. Jerrold Orne to Head Library at the Air University

Dr. Jerrold Orne, former Director of Libraries, Washington University, St. Louis, Missouri, has been appointed Library Director at the Air University, Maxwell Air Force Base, Alabama. He succeeds Colonel W. J. Paul, who has been named Director of the Research Studies Institute.

The author of six books on libraries and related subjects, Dr. Orne is a member of SLA, ALA, and other associations.

Subscribe Now

Insurance Book Reviews, a publication of the Insurance Division of SLA, is useful to college, public and special libraries interested in any phase of insurance. Sample copies may be obtained from Natalie D. Binet, Savings Banks Life Insurance Fund, 369 Lexington Avenue, New York 17, N. Y.

Subscription orders should be sent to Hazel K. Levins, Mutual Benefit Life Insurance Co., P. O. Box 359, Newark, N. J. Price: $3.50 a year; $6 for two years.

The American Statistician

Attention is called to the regular appearance in the *American Statistician,* the news publication of the American Statistical Association, of material from the less available *Statistical Reporter.* The latter, published by the Division of Statistical Standards of the United States Bureau of the Budget, is not generally available to the public. However, the *American Statistician* publishes current material from the Statistical Reporter under the heading "Current Statistical Projects of the Federal Government."

Subject Group Formation in Aslib

Aslib has formed, or is planning to form in the near future, groups in the following fields: Textiles; Food and Agriculture; Economics, including Finance, Banking and Commerce; Medicine; Engineering and Technology; and Sociology.

The formation of such subject groups within SLA's British counterpart may afford SLA the opportunity to provide assistance in the light of its experience.

Army Closes Field Office

The New York Field Office of the Reorientation Division of the Department of the Army, Office for Occupied Areas, is closing on or about January 1, 1952.

All stateside responsibilities for the selection of materials for the Information Centers in Japan will be transferred at that time from the Reorientation Division, Department of the

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Preservation of Original Documents

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and allowed the manufacture of cheap paper in large quantities.

Refinements in the manufacture of chemical pulp have led to excellent grades of the product, with very little attack on the cellulose chains and with the almost complete removal of the "impurities." In the determination of its quality, cellulose is regarded as consisting of three fractions: Alpha, Beta, and Gamma. Briefly, here is how each portion is determined: the cellulose sample is disintegrated in a standard grinder, then placed in a strong sodium hydroxide solution for a given time. Part of it "dissolves" or passes into solution; the portion which remains undissolved is regarded as Alpha cellulose. When the solution containing the dissolved portion is acidified, the Beta fraction precipitates out. The Gamma fraction is that portion which continues to remain in solution, or the balance. Roughly, the degree of "purity" rests in the amount of the Alpha fraction, and a high Alpha indicates good quality.

Purity can also be measured from the opposite direction by determining the amount of degraded, or unstable cellulose present. This is the principle involved in obtaining the copper number. The lower the number, the better the quality.

There is a little more to it than the foregoing. It was determined that the degree of permanence rested with the amount of breakdown in the Alpha portion on aging. When the cellulose breaks down, the Alpha splits to Beta. (The Gamma portion is unchanged, comparatively.) When the Alpha cellulose content decreases, the copper number rises — both show a decrease in quality.

To simulate aging, the device of heating at 100°C. for 72 hours is employed. To further confirm deterioration, changes in physical strength characteristics, such as folding endurance, are observed before and after artificially aging It has been shown that the acidity of a paper has an important affect on its aging characteristics.

Cellulose is *essentially* the same chemically regardless of its origin or source. *There is a difference in the arrangements of the cellulose structures* within the various fibers, hence, differences in the strengths of papers made from them. Getting back to our chemical pulp, organizations have developed refining processes which yield pulps of close to 95 per cent Alpha cellulose. The pulps certainly approach in quality the best grades made from cotton rags, and stand up in the artificial aging tests.

Preservation Factors and Methods

Rag content is not in itself a criterion of permanence. The terms 25 per cent, 50 per cent, 75 per cent, or even 100 per cent rag are in themselves meaningless as a measure of stability. If the Alpha cellulose content and the copper numbers of a rag and sulfite stock are the same, both before and after aging, then, *the all-rag may be preferred because of its strength which gives increased durability.* On the other hand, the all-sulfite may print much better, and if little after-handling is allowed it may be preferred. Sometimes a mixture would be best. For permanence, I would much prefer an all-sulfite cellulose, with a high Alpha content and low copper number that changed little on aging, to an all-rag cellulose, with a high Alpha content and low copper number, but which did change greatly on aging.

Papers made of cellulose fibers of the highest purity, other factors being equal, are preserved most easily. When it is known in advance that a permanent record is required, a proper selection of paper and ink can be made. But the problem of preservation may not arise until long after the printing.

The paper may require "restoration." It may be necessary to clean it, or remove stains, or tape, etc. Adelaide Moffet gives a lengthy description of the methods used by the National Archives in their *Bulletin* Number five. In the case of newsprint, and following a

practice of the National Archives, as well as of others, we at *The New York Times* have found that a rinse serves to reduce considerably the yellow-brown discoloration. Acid materials are removed, the appearance improved, and the sheet usually strengthened. (A sheet may sometimes be too far gone for rinsing.) Bureau of Standards tests showed that most fillers had little affect on aging qualities, except in the case of calcium carbonate which is alkaline and seems to improve paper when folding tests are used as a measure. W. J. Barhow adds calcium carbonate to paper being restored by dipping in a dilute calcium hydroxide solution, then in calcium bicarbonate solution which precipitates out calcium carbonate. Alkalizing may serve to advantage.

Now, the sheet, as we have seen, must be kept at a controlled temperature and relative humidity, away from light, fungi, insects, from air itself, and all handling avoided if the record is to be made permanent. Documents for "dead storage" can be cleaned up and put away in sealed lightproof containers in an inert atmosphere like nitrogen or helium, with just enough water vapor present to give about 45 per cent relative humidity. Since most documents must be used, these requirements must be modified, and in addition, the paper must usually be reinforced. Here one must keep the increase in weight and thickness down to a minimum, and avoid reducing the clarity of the print.

Sandwiching vs. Impregnation

Let us first list the principal methods used for reinforcement and preservation, then, examine their relative merits:

1. Crepelining — pasting on a thin silk gauze.
2. Japanese tissue — pasting on a thin tissue.
3. Plastic application by:
   a. Spraying on or dipping into *lacquer* (plastic in volatile solvent).
   b. Pressing or rolling on a *coated foil* (hot or cold).
   c. Roller press or flatbed press with *uncoated foil* (hot).

Fold endurance and crease resistance are apt to be important considerations in reinforcement. It is true that the laminate can be made very stiff so that flexing is not at all a problem. To give this manner of protection, stiffness, we would need to go to thick layers, which is usually in itself objectionable.

The sheet being preserved can be sandwiched between two layers of the reinforcing and permanizing material or can be impregnated with it. When a laminate is flexed, a tension is developed in the skin layer on the outside; a compression in the skin layer on the inside. It is easy to see the type of disruptive stress that is set up. There is a tendency either for the outer skin to break (unless it is very strong or elastic) or for the interior of the sheet itself to split (since we must assume that the skins are firmly anchored to both sides of the paper). Also, if we have begun with a weak, brittle paper, the reinforcing material is not strengthening the paper itself. When the paper is impregnated with the protective material, it is strengthened by it.

Another important factor is thickness. The thinner the structure the less will be the tension developed in the outer portion of any sheet on flexing.

Crepeline sheets are, first of all, of the sandwich type. The treatment itself results in a brittle product which cracks on creasing. It does not protect from light, heat, fungi, or insects; the crepeline itself deteriorates on aging.

Japanese tissue is also of the sandwich type. The tissue obscures the printing. With the proper selection of materials, it can show good permanence on aging.

Plastic substances offer several methods of application. They can be applied wet by means of solutions or suspensions, and the solvents removed. In practice, it may take a long time be-

fore the last traces of even a volatile solvent are completely removed. Then there may be a lack of uniformity in distribution of plastic. If a foil is used instead, it is being applied already uniform. The amount that is applied is regulated by altering the thickness. Of course, there is a lower limit fixed by availability in thin form.

Coated foils are applied by pressing or rolling, either hot or cold, depending upon the adhesive. The result is the thickened sandwich type of sheet. Great care must be exercised in the choice of adhesive since many are unstable; although the National Archives *Bulletin* suggests that those requiring heat in their application are not desirable, there are some that appear to be fairly stable. Generally, they are difficult to apply smoothly and their costs are high.

Uncoated foils must be melted into the sheet. This can be accomplished on the roller type of press, or on the flatbed, hydraulic type. With the roller press the resulting laminate will usually be more of a sandwich type. With the flatbed press the exposure for the required time at the elevated temperature and pressure will permit any degree of penetration right up to full saturation of the paper. The press is heated and cooled while the material is compressed; the operations proceed during a time cycle which is predetermined. The plastic is "cured" during the cooling into a smooth, flat impregnate-plus-coating. There is usually a *decrease* in bulk, which gives better fold resistance. At the *Times*, we prefer the hydraulic press treatment; the impregnation that takes place strengthens the paper itself. A crease test on a laminate made with the same starting materials will quickly show the advantage of impregnation over sandwich, especially when the paper is brittle.

What should be our choice of plastic? Plastics are classified as being thermoplastic or thermosetting. Thermoplastics are those which can be reversibly softened or hardened with heat changes. The thermosetting plastics are permanently fixed once they are set or cured by heat and pressure and they cannot be melted. A well-known example of the thermosetting type is Bakelite. Some of the synthetics are derived from natural substances, as from casein, cellulose, etc. The other synthetic resins are produced by complex molecular reactions from coal-tar and non-coal-tar bases; more recently produced are the organo-silicon resins. The final substance, the plastic, gets its name from base materials from which it is composed. It may be mixed with plasticizers to give better flow properties, and to soften it; with fillers also for the purpose of modifying its properties and with pigments to color it.

Cellulose acetate, the plastic which we are presently using in our permanizing work, is a synthetic — a derivative of cellulose. It is of the thermoplastic type, which means that it softens when heat is applied, and hardens when cooled. Its working properties have been modified through the addition of a plasticizer; this helps it stand up better on flexing and gives better flow in molding.

It does not approach being an ideal covering material:

1. Plasticizer can be lost on aging (through vaporization).
2. Plasticizer sometimes exudes and causes staining.
3. A poorly chosen plasticizer will encourage mold or fungus attack.
4. Many plastics are stronger and tougher.
5. It is permeable to gases (oxygen, carbon dioxide, etc.)
6. Although water resistant, it is not waterproof.
7. It supports combustion.

On the other hand, and this is very important, it stands up well on aging tests. It is dimensionally stable with changes in relative humidity.

How does it compare with other plastics?

Cellulose acetate-butyrate has greater moisture resistance, higher stretch

and greater toughness than the acetate, but it exudes plasticizer during lamination and can develop an odor.

Ethyl cellulose has many good properties, but is soluble in many solvents, hence, easily marred. It is available only in 0.003 inch thickness or thicker; also contains plasticizer.

Polyethylene is a strong, flexible, inert plastic with good moisture vapor resistance — very tough film — but it is imperfectly stable under prolonged exposure to ultraviolet.

Polyvinyl alcohols swell in contact with water.

A vinyl chloride copolymer, like vinylite, does not require a plasticizer; it laminates nicely and yields a fairly tough, pliable sheet. Aging tests on the best grades obtainable showed them to darken.

The polyvinylidine chlorides, and the rubber hydrochlorides also show bad aging properties.

Nylon film is extremely tough — really difficult to tear — but it is unavailable in foil form; also a small sample (perhaps not typical) which was secured and used for a trial lamination showed bad aging qualities, became brittle, etc.

It can be seen that care is necessary in the selection of a covering material. *Test any method before you use it on your valuable documents.* Don't take a salesman's word that it will be "permanent." Cellulose nitrate is especially to be avoided.

Cellulose acetate is by no means perfect. In an all-around sense, from the standpoints of strength, permanency, thickness, clarity, availability, etc, it appears to be the best medium of those investigated.

We use 0.00088 inch acetate of the same specifications as that employed by The National Archives.

Some laminators further reinforce their laminates with tissue. In a cooperative research investigation with one, we tried a series of many very good grade rag and linen tissues. Generally, the laminates became increasingly opaque with increasing basis weight of tissue, and stronger in the same order. We tried a woven fiberglas cloth, which gave excellent strength, but found that the crossing weave of the cloth broke up the images. A fiberglas manufacturer was prevailed upon to submit a small sample of fine glass fibers mounted on plastic in a special parallel alignment — no crossed fibers. When this is laminated to the paper with the fibers running one way on the front and in the cross direction on the back, excellent strength can be achieved. But this would be extremely costly even if it were possible to obtain such sheets, and it is not.

In the matter of dull or matte finish versus smooth finish, the former may be easier to read, i.e., less glare, but it also serves to hide imperfections in the laminate. In this connection, it is important to inspect the laminates carefully to make sure that the job was well done. In the case of our own pages, as many as eighty to one hundred pages are laminated simultaneously, and an occasional page may be imperfect. These defects can and should be corrected.

Summary

Paper made from the best grades of chemi-pulps would appear to be as permanent as that made from the best rags; i.e., if both have the same alpha cellulose fraction before and after artificial aging, etc. Rag paper is generally stronger, hence more durable; chemi-pulp paper may print better.

Laminating with a proper plastic, with or without permanent type tissue as required, will keep out molds, fungi, etc., as well as provide extra strength to withstand handling.

It is a good practice to wash or alkalize the newsprint before lamination.

Of all the plastics investigated, cellulose acetate appears to be the best suited to this purpose, although it does not approach being an *ideal* covering material.

Under no circumstances should valu-

able documents be treated with untested materials.

The "impregnated" laminate is preferable to a "sandwich" type. If the laminate is flexible, the thinner it is, the better will it withstand stresses during flexing.

In storing, place clean, unlaminated sheets in sealed, lightproof containers in an inert atmosphere (nitrogen, helium, etc.) containing enough water vapor to produce about 45 per cent relative humidity at a temperature of about 70°F. Laminated sheets should be stored under the same conditions, and in addition, sufficient plasticizer may be introduced to give equilibrium between the partial pressures of plasticizer vapor in the plastic and in its atmosphere.

If documents must be used, approach these conditions as closely as possible.

Keep handling down to a minimum.

Is Binding the Answer

(*Continued from page* 380)

though it is likely to contain data useful to their projects. Another obstacle to our use of micro-reproduction is distance. Much of our circulation is accomplished through an internal mail system because our clients are located over a rather extensive area. Although a good proportion of our potential clients are located fairly near the library, the distance is still large enough to encourage extensive use of mail delivery. In order to provide acceptable information service to all of our clients it would be necessary to install a number of reading machines in each of several departments, such as engineering, purchasing, personnel, research, and others. Obviously, a fairly large investment in "readers" would be required. Another definite drawback to the use of micro-reproduction is the time involved in placing such material on a machine and locating the desired references therein. In view of these findings, we decided to use some form of micro-reproduction only as the very last resort.

Thus we arrived at the last alternative — retention of the material in its original printed form. Since we were unable to enlarge our library area adequately to meet our needs, we searched for a storage space. A building with space for expansion, and which was within fairly reasonable walking distance of the library, was discovered. We proceeded to store the material that we considered could best be kept in a separate area and we have operated under this procedure for nearly a year. I am the first to admit that it is not an entirely satisfactory arrangement — distance, even though it is not great, is a negative factor. Time is an important item to our clients and many of them forego the publication when informed that it will take a half-hour or so before the desired document can be obtained. However, we are still convinced that our service is best when we can furnish the material in its original page form.

Thus we arrive at the title of this paper, which is, in case you have forgotten, "Is Binding The Answer?" Just so long as we can gradually gain some space each year, whether for the library or the storage area, we shall continue to bind our material and have it available in regular size print.

As a last comment, I leave you with this thought: the binding profession must keep its eyes on new forms of reduced print. It is definitely in the cards that the future will bring increasingly greater use of micro-reproduction methods. The majority of research libraries will be forced to forego both regular size printed material and storage areas (they do cost money) and will concentrate more and more on publications which are available in some type of greatly reduced print.

Professional Training

(*Continued from page* 383)

tion only, but one demanding long-range planning.

4. The profession itself must recognize that the existence of special libraries in prosperous as well as depression eras hinges on performance.
5. Good performance—present and future—depends on the adequate preparation of the staff.

The implications of the five foregoing premises must be apparent to all who are special librarians or are interested in special libraries. They call for in-service training as well as for united action to make possible a trained personnel to carry on and to spread the usefulness of special libraries to businesses, industries and service areas.

Division Highlights

(*Continued from page* 385)

mittee of nine New York advertising librarians an interesting program was arranged.

Those departments which use the agency library most often were represented by speakers who are specialists in each field. The forum was entitled: THE AGENCY LIBRARY AND ITS RELATION TO:

Library Research—Katherine D. Frankenstein, librarian, Batten, Barton, Durstine & Osborn, Inc.

Research Media and Merchandising—Lyndon O. Brown, vice-president, Dancer-Fitzgerald-Sample, Inc.

Copy and Art—J. F. Egan, vice-president and copy chief, Doherty, Clifford & Shenfield, Inc.

Radio and Television—Frederick A. Long, radio and television director, Geyer, Newhall & Ganger, Inc.

Public Relations—Hal Davis, vice-president and publicity director, Kenyon & Eckhardt, Inc.

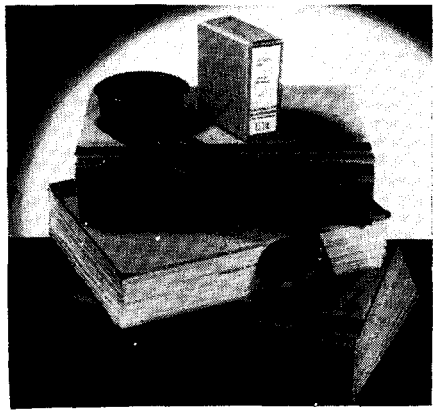
Client Contact and New Business—Jackson Taylor, vice-president, Lennen & Mitchell, Inc.

Delphine Humphry presided over the forum which was an unqualified success. The speeches were outstanding and it is planned to present these papers in the January issue of SPECIAL LIBRARIES.

Meetings such as this, more than anything else we do, help to raise the prestige of the librarian and are the essence of good public relations. Let us have more of them.

MRS. ANGELICA VAN R. BLOMSHIELD,
Division Liaison Officer and *Chairman,*
Division Relations Committee.

Cramped for Periodical Storage Space?



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Instead of binding your periodicals in bulky, space-wasting volumes, order microfilm copies from University Microfilms. The cost is approximately the same as binding charges—about ¼ cent per page—*but you save 94% storage space!* Your service to patrons will not suffer, because studies show 5-year-old periodicals are looked at only occasionally, 10-year-olds but rarely.

University Microfilms supplies 720 periodicals of all types on microfilm, and new titles are being added monthly. Copies are sharply legible and practically imperishable. Inexpensive portable readers are now available for home or office use.

WRITE FOR BOOKLET, "THE PROBLEM OF PERIODICAL STORAGE IN LIBRARIES"

UNIVERSITY MICROFILMS

ANN ARBOR, MICHIGAN

Preservation by Microfilm

(*Continued from page* 373)

gest results in the last decade or so in reducing film graininess arose from the reduction of clumping rather than from the reduction of grain size itself.

A great deal of progress has been made since the advent of the electron microscope. Before it made its appearance, we were unable to see film grain. The resolution limit of the optical microscope is 0.13 of a micron (0.13 μ) when using light of 365 millimicrons (ultraviolet). (Resolution is a function of wave length, becoming poorer as the wave length gets longer.) The best optical microscope cannot see the film grain of microfilm; but the electron microscope can. The limit of the electron microscope is about five millimicrons and, wonderful as it is, it is pushed to its limit to make visible the grains of a Lippman emulsion. Fortunately we can see the grains of microfilm emulsions now because they are much larger than the grains in a Lippman emulsion.

Film grain in a developed film is neither a round disk nor a ball — it isn't round at all. It consists of twisted filaments of metallic silver. When the gelatin sets during emulsion manufacture, the orientation and size of the grain is predetermined. Some developers are capable of reducing the halides to silver without sensible change in orientation of the grain or increase in its size. Most developers change both to some degree. The number of photographic reducing agent chemicals has increased by leaps and bounds in recent years, and for some reason the potential users seem not to have heard about them.

The choice of a suitable developer agent is really an engineering problem for specific application. Some developers may vary little with temperature, others may keep well, others have low chemical fog and high contrast, still others have different heat and deterioration characteristics and so forth. If a complete roll of microfilm has been photographed from typed sheets only, we can use a high contrast, high resolving power developer, if photographs are in the roll also, we use a compromise developer. In the latter case we seek good gradation and at the same time the highest resolving power we can obtain for the specific gradation. Unfortunately the physics of the situation does not allow us to eat our cake and have it too; we can't have both and we must suffer a detail loss in clarity of text to obtain good picture reproduction.

I shall avoid the subject of sensitizing entirely. Emulsions that do not have added to them dyes that stain the silver grains and sensitize them are color-blind, responding only to ultraviolet and blue light. Small quantities of staining dyes are needed to make the film responsive to green light rays and to red ones. We can use color-blind (positive) film for typed text and panchromatic (negative-sensitized) film for photographs.

Developed Films

We will skip over all the less common kinds of development: physical development, reversal development, etc., and consider the story of development finished. In customary processing, the film, after development, is cleared in hypo. Archival requirements for processing limit the hypo content of developed film to a low numerical value. As you know, the presence of hypo in developed film accelerates the deterioration of the image; it accelerates the decay of the gelatin. Although the hypo content of microfilm is *supposed* to be below the value set as the archival limit, you'll never know what the content of *your film* is unless you measure it or have it measured by a competent independent laboratory. The recommended test is as sensitive as is needed. Unfortunately, testing microfilm for hypo is used far less often as a control index than it should be by microfilm processors; still less — if at all in many cases — by microfilm users. If microfilm is being used for secondary preserva-

tion, make certain that your film is as free of hypo as you can make it; the smaller the hypo content, the longer your film will last.

What can we do to preserve a strip of microfilm? Some of the answers are implicit in the foregoing; a big one is to wash the film thoroughly. If that has been done, the next big problem is to protect the gelatin from decay and, as a matter of secondary importance, protect the film base from decay. It may be a surprise to learn that some of the plasticizers commonly used in the manufacture of acetate sheeting of certain grades are surprisingly good nutrient materials for fungi and bacteria. Obviously your microfilm should avoid such plastizers — and usually does. You can protect your film by swabbing the surfaces with fungus and bacteria inhibiting compounds such as those sold under the trade names of Merthiolate and Roccal. There are numerous others. You can protect the surface and seal the edges by means of a very thin coat of quick-drying lacquer sprayed on the film; one material suitable is Vectograph lacquer made by the Polaroid Corporation of Cambridge, Mass. There are many others.

The emulsion of the film can be hardened to increase its resistance to abrasion by means of formaldehyde. This also retards fungus and bacteria growth for the same reason that it can be used to preserve an appendix. The film can be stored in a constant temperature storage area far from exposure to light, but the narrower the temperature range over which you permit the temperature to vary, the more it will cost you for the equipment and the more it will cost you to run it. You might also seal the precious piece of film in an evacuated glass vessel and put in a helium atmosphere like they did when the preserved the Constitution. Then, barring flood, fire, insurrection, Acts of God, *and human errors called boners*, the single piece of film

that you are trying to preserve has a good chance of "standing up" for fifty years and maybe more. If you MUST have it last longer, I suggest that you photo-etch a piece of platinum, but you won't be able to put it in your present-day microfilm reader and use it. However, at the end of fifty years you might have a suitable reader — so maybe we shouldn't worry too much on that score.

Speaking of microfilm readers in relation to the preservation of microfilm, let me emphasize that if some of today's expansive and glittering dreams concerning preservation are to come true, preservation must be planned — and the time is now. We must design our methods to make the most *economic* use of today's materials and processes. I think we can assume pretty safely that we are not doing so now.

Preservation and Storage Stages

Webster defines preservation as "the act or process of preserving or keeping from injury or decay." The objective, therefore, is *to keep and save the origianl harmless from injury and decay.* It follows that we cannot keep and save the original and still make copies from it while we are doing so. If we need copies, for whatever reason, these MUST be made from intermediate copies that are accessible in live storage; *they can not be made from material that is in dead storage, where material to be preserved belongs.*

The general procedure is not new; a modification has been in use for years in the entertainment motion picture industry. Briefly there are three stages: Stage 1. The originals are in "dead" storage under suitable conditions. (Temperature constant at about 50°F. with the smallest variation we can afford.) Stage 2. The intermediate copies are in "live" storage under the best possible conditions, yet assuring ready availability for the making of copies. The intermediate copies are used to provide release prints. Stage 3. The release prints — available for ready use, yet stored under the best day-to-day conditions. (Temperatures above room temperature and sudden changes in temperature to be avoided where possible.)

This arrangement has all the advantages of the customary handling of "protection copies," with the further advantage that possible damage or loss is anticipated. Intermediate copies may be dispersed geographically if deemed in the national interest. The mechanics of the method are simple. Once each five years the originals are withdrawn from storage. The user of the subject advises the processor of the probable requirements for release prints for the forthcoming five years. The laboratory is then asked to make up all intermediate copies (derived directly from the originals) necessary for a full five years operation. These are all made up at one time.

As soon as the intermediate copies specified above are completed, the originals are returned to stage one storage for the forthcoming five year interval. This storage presumes the best conditions known; such conditions are not assured merely by the appearance of a warehouse bill once each month. The important characteristic of the method is that originals remain in "dead" storage a very long time as compared with the length of time they are being used for the making of intermediate copies. Storage for five years and use for one day as indicated would represent a

typical schedule. During the day the original may be re-treated for the succeeding five year storage period.

It may well happen that the owner of film will underestimate (or overestimate) his need for prints during a particular period. This will not vitiate the utility of the suggested method unless he fails to learn by his experience.

With regard to the suggested interval of five years there is nothing sacred. It is the author's opinion that with materials as handled in the present manner this interval represents a good compromise starting point for the various factors involved.

The problems of reproduction and print quality are too involved to allow coverage in this paper. Suffice it to say that our present microfilm handling methods leave much to be desired and it is a justifiable assumption that we are not realizing with today's microfilm materials a reasonably high percentage of the quality potential that conscientious American manufacturers have provided. This seems to be a situation in which microfilm users are by no means alone. An intelligent and aggressive engineering study of the materials and methods of microfilm operations as commercially conducted cannot fail to reveal performance improvements of significance and, I suspect, large magnitude in terms of the national expenditure on microfilm in all its ramifications — and with no real increase in cost.

No organization is so small or so large that it cannot benefit from a study of its own operations and how these operations are integrated with the national problems on microfilm. All that is needed is the will; engineers will find the way. The field of microfilm operations needs definition and standardization of methods and materials. As in every other industry that has taken such steps, the result will be "better things for better living"--at lower cost to all.

Off the Press

(*Continued from page* 388)

the physical care of infants, due to new knowledge in this field, have been incorporated, as well as a stressing of the importance of the child's relation with his parents and others in the family.

THE INTERNATIONAL ECONOMY. Third Edition. By *John Parke Young*, Ph.D. New York: The Ronald Press Company, 1951. 813p $5.50

Major events in world affairs during the past ten years have tended to shape what might have been simply a revision into what is practically a new volume. Like its predecessors, this edition attempts to set forth in a clear manner the essential features and theoretical bases of the international economy.

The work is intended not only for college students but also for the many others who seek information and understanding of international economic affairs and the major role which the U. S. plays in these affairs today.

NINTH GRAPHIC ARTS PRODUCTION YEARBOOK. The standard reference volume on production in advertising and publishing. New York: Colton Press, Inc., 1950. 725p. $15

It is regrettable that space did not allow more than a brief notice of this tremendous volume earlier in the year. Not that it needs to be advertised, for it is well known among those for whom it was designed; not that people might like to read about it, for there can be no doubt but what they would rather read the work itself; but simply because it is impossible not to say something—and probably more than something—about an issue of the *Graphic Arts Production Yearbook*.

It is late in the year now, and most of you have had, no doubt, ample opportunity to work with the ninth edition of this "Bible of the Graphic Arts." There can be, therefore, but one question uppermost in anyone's mind about such a spectacular production: *Is it possible to improve upon the present edition to such an extent as to warrant a tenth?* Until now each successive edition has shown marked improvement, greater coverage and increasing value to its many users. But with this ninth edition it would seem that even the publishers have exceeded their ambitions. To go beyond the boundaries established by this encyclopedic publication is indeed a challenge. That so much has been accomplished to date would lead us to believe that even greater things may be possible. There will be many editors, advertising managers, production men and printers waiting for the Colton Press to take up its own challenge.

It would be rare indeed to discover anyone connected with the graphic arts who has not heard of or used so basic a volume as this yearbook. To enumerate the contents would take pages, for there is seemingly no end to the material presented between these beautiful covers. From minor to major steps in the production procedure, all is graphically illustrated. No matter what medium of the graphic arts you are engaged in, the answers to your questions are contained somewhere in this book. All told there are 918 pages, including 728 pages of text, with special indexes. The remainder of the pages consist of actual samples and advertisements which are indeed a pleasure to look at.

If by any chance you are that rare individual who has not seen this book, a book that can only be termed the leading exponent of the craft it represents, don't continue to be tardy. There is a wealth of pleasure as well as profit in the *Ninth Graphic Arts Production Yearbook*, and it is worth its weight in gold.

TRAVEL PREVIEWS, Educational Manual. Edited by *Jay Rathburn*. Milwaukee, Wisconsin: Travel Previews. Forty-eight manuals; twelve to a series. Monthly. Complete group: $12; One Series: $3.50; Single copies: $0.50

Highlight features include histories and historical sights, recreational, industrial and natural resources of the states and other areas; national parks and monuments, etc. Each number will describe a single state from the educational travel viewpoint.

In Brief

The February, 1951 edition of the monthly review *Wirtschaftsdienst* (English Edition) contains two articles of interest to SLA members in the field of documentation: "Documentation in the Technical and Economic Field in Germany" by Professor Dr. Fritz Prinzhorn, whose article on "Current General Bibliographies About Individual Countries" appeared in SPECIAL LIBRARIES, July-August, 1951, and "International Professional Documentation" by Professor Dr. Arno Winter.

Single copies of the following are available free from the Institute of Life Insurance, 488 Madison Avenue, New York 22, N. Y.:

Training for Today's Life Underwriter. A Review of Educational and Training Programs Provided through the Institute of Life Insurance. Published by the Advisory Council on Life Underwriter Education and Training. 16p. Describes educational programs available through American College of Life Underwriters, Life Underwriter Training Council, Purdue and Southern Methodist universities.

Life Insurance Fact Book: 1951. 108p.

Have You Heard . . .

(*Continued from page* 389)

Army, to the Information Centers Division of the Department of State.

Florida Offers Assistantships

The University of Florida Libraries is offering a graduate assistantship for study leading to a master or doctor's degree in a subject field other than library science. Graduate assistants work fifteen hours per week in the library, assisting in bibliographical research in their field of study. Stipend is $1,100 for an eleven month period and holders of assistantships are exempt from out-of-state tuition fees. This assistantship is available for the second semester 1951-1952, which begins February 11.

Inquiries are invited, especially from librarians or students in library schools who are interested in advanced work in subject fields. Applications should be made to: Stanley L. West, Director of Libraries, University of Florida.

Chapter Highlights

(*Continued from page* 385)

fore, no reports on union lists and other publications are included in this month's column.

Considerable thought has been given to the problem of transmitting chapter news through "Highlights." Several chapter presidents have replied to my letter asking for suggestions and those attending the luncheon on October 19, in New York, presented some good ideas. In the meantime, I should be glad to hear from any member who wishes to suggest improvements in reporting.

HELEN MARY PYLE,
Chapter Liaison Officer and *Chairman*,
Chapter Relations Committee.

American-Swedish Institute

(*Continued from page* 367)

is fluently bilingual and trained to conduct groups through the museum either in English or in Swedish. My secretary is quadrilingual, handling Swedish, French, German and English with facility.

Translation is an art. When done well and dependably it is hard and time-consuming work which demands fair remuneration. In the case of legal or technical material, for instance, we usually charge two cents a word. If the work is what it should be, it is worth it.

As a bunch of foreigners, which we are, we are pleased and flattered no end to have requests for editorial assistance on English manuscripts. I can think of no greater compliment to people who have acquired a language than to have the native speakers defer to them for advice of style and syntax. When you have reached that point, you can truly feel that you have been Americanized and that you "belong."

I do not belong to the Special Libraries Association, but as an outsider I may still grasp the opportunity to wish you and your organization well. You are rendering distinguished service to the realm of scholarship and to the world of books. May I recall to your mind the grand words by Clarence Day:

The World of Books

Is the most remarkable creation of man
Nothing else that he builds ever lasts
Monuments fall
Nations perish
Civilizations grow old and die out
And after an era of darkness
New races build others
But in the world of books are volumes
That have seen this happen again and again
And yet live on
Still young
Still as fresh as the day they were written
Still telling men's hearts
Of the hearts of men centuries dead.

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The usefulness of the Canadian Almanac and Directory for checking addresses, the spellings of names of business correspondents, and the precise titles of government and other officials, alone makes it almost indispensable in any modern reference library, whether industrial, civic, or institutional. In addition, its wide range of up-to-date information on many other subjects makes it the most authoritative and complete directory of Canadian affairs available today.

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